ORIGINAL

MARYLAND DEPARTMENT OF THE ENVIRONMENT
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April 17, 2014

Mr. Jan Szaro
Maryland Project Officer
U.S. Environmental Protection Agency
Region III
Site Assessment and Non-NPL Federal Facilities Branch (3HS12)
1650 Arch Street
Philadelphia, PA 19103-2029

Re: United Rigging and Hauling (MD-246) Expanded Site Inspection Report

Dear Mr. Szaro:

Enclosed is Expanded Site Inspection report for the United Rigging and Hauling facility located in Beltsville, Prince George's County, Maryland 20705. If you have any questions concerning this matter, please contact me at (410) 537-3440.

Sincerely,

Phillip Anderson

Phillip Anderson, Project Manager
NPL/Site Assessment Section

PA

Enclosure

cc: Mr. Horacio Tablada
Mr. James Carroll
Ms. Peggy Williams

ORIGINAL

EXPANDED SITE INSPECTION
of the
UNITED RIGGING AND HAULING SITE (MD-248)

April 2014

Prepared by: Maryland Department of the Environment
Land Management Administration
Land Restoration Program
1800 Washington Boulevard
Baltimore, MD 21230

Prepared for: U.S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

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1.0 INTRODUCTION

1.1 Authorization

This Expanded Site Inspection (ESI) was performed by the Maryland Department of the Environment (MDE), Land Management Administration, Land Restoration Program under a Cooperative Agreement with the U.S. Environmental Protection Agency (EPA).

1.2 Scope of Work

MDE's Federal Assessment and Remediation Division performed an ESI of the former United Rigging and Hauling site (MD-248) in Beltsville, Prince George's County, Maryland, EPA identification number MDD981106768. The purpose of the ESI is to characterize potential migration of residual polychlorinated biphenyls (PCBs) remaining on the United Rigging and Hauling (URH) site after the 1985 emergency removal action and to determine if those residual PCBs are contributing to the known PCB contamination in the Anacostia River watershed (which includes Indian Creek). MDE collected sediment samples from the unnamed tributary of Indian Creek and Indian Creek itself to just downstream from its confluence with Beaverdam Creek.

1.3 Executive Summary and Conclusions

United Rigging and Hauling Company (URH) is a rigging and hauling operation that started in 1970. The company stored large equipment and at one point acquired, stored and stockpiled more than 700 transformers in two different locations in haphazard fashion with no measures in place to prevent or control spills.

In early May 1985, the Prince George's County Health Department received an anonymous complaint regarding an oil release into an adjacent unnamed tributary of nearby Indian Creek. A sample collected by the County from an oil-filled storm water drainage culvert identified polychlorinated biphenyls (PCBs) at 235 parts per million (ppm). The County immediately referred the site to the State of Maryland's Hazardous and Solid Waste Management Administration (MDHSWMA). Maryland's Hazardous Waste Strike Force (HWSF) obtained a search warrant and collected multiple samples from transformers and on- and off-site soils. Preliminary data identified PCB concentrations ranging from 50 to 80 percent in the transformers, contamination of on-site soil up to 55,000 ppm and off-site migration of PCBs in soils up to 2,000 ppm. Due to the immediate threat to public health and the environment, the U.S. Environmental Protection Agency (EPA) ordered an emergency cleanup under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

EPA initiated the PCB cleanup and removal in late May 1985. The remediation was completed on December 23, 1985 and a total of 553 truckloads of PCB-contaminated soil and debris totaling approximately 7,728 cubic yards were removed from the site and sent to Model City, New York for disposal.

In June 1990, NUS Corporation completed a Site Inspection for EPA. PCBs were identified at low concentrations in many of the on-site soil and sediment samples. Aroclor 1260 was detected in a sediment sample at the end of a drainage pipe near the fence line at 3.6 ppm. The September 2008 EPA Biological Technical Assistance Group screening benchmark for freshwater sediment is 0.0598 ppm of total PCBs.

It was a concern that since residual PCBs remained at the URH site after the 1985 emergency removal, those residual PCBs might be migrating into the adjacent unnamed tributary of Indian Creek. Indian Creek flows into the Anacostia River, which has been the subject of PCB studies in recent years. Therefore, MDE made plans to conduct an ESI to characterize the PCB contamination in a 0.4-mile section of the unnamed tributary of Indian Creek starting adjacent to the URH site, and an approximate 2.5-mile section of Indian Creek itself downstream to the confluence with Beaverdam Creek.

On December 12, 2013, MDE collected fourteen sediment samples (including two field duplicates) in the adjacent unnamed tributary of Indian Creek, Indian Creek itself, and Beaverdam Creek just upstream from its confluence with Indian Creek. Analytical results of the sediment samples identified Aroclor 1252 in URH Sed-5 and its field duplicate URH Sed-15 at 0.0944 mg/kg and 0.0934 mg/kg respectively. There were no other PCBs detected in any other sample.

A Toxicological Evaluation was prepared as part of this ESI using a recreational use scenario. No risks to any recreational user were identified; therefore MDE is recommending no further investigation by EPA of PCBs migration from the URH site at this time.

2.0 SITE DESCRIPTION

The relatively flat URH site is located south of Ammendale Road approximately ½-mile northeast of Beltsville, Prince George's County, Maryland. The unnamed tributary of Indian Creek is a small stream located approximately 425 feet west of the URH site on Prince George's County tax map 0013, parcel 159 in Congressional District 5. From the URH site, the unnamed tributary flows southerly for approximately 0.4-mile before discharging into Indian Creek. Indian Creek also flows southerly for approximately 8.6 miles before discharging into the Anacostia River. There are likely several Probable Points of Entry (PPE) for URH PCB contamination migrating into the unnamed tributary of Indian Creek as determined by the preferential pathways for surface water runoff. These are located along the eastern bank of the unnamed tributary in the vicinity of the coordinates 39° 2.95′ north / -76° 53.75′ west on the Beltsville 7.5 quadrangle topographic map. The Maryland State grid coordinates for the PPE area of the unnamed tributary of Indian Creek are approximately 632,050 feet north / 802,375 feet east.

Figure 1: Regional Highway Map

Figure 2: Cropped 1964 Beltsville 7.5′ Topographic Map (photo revised 1979)

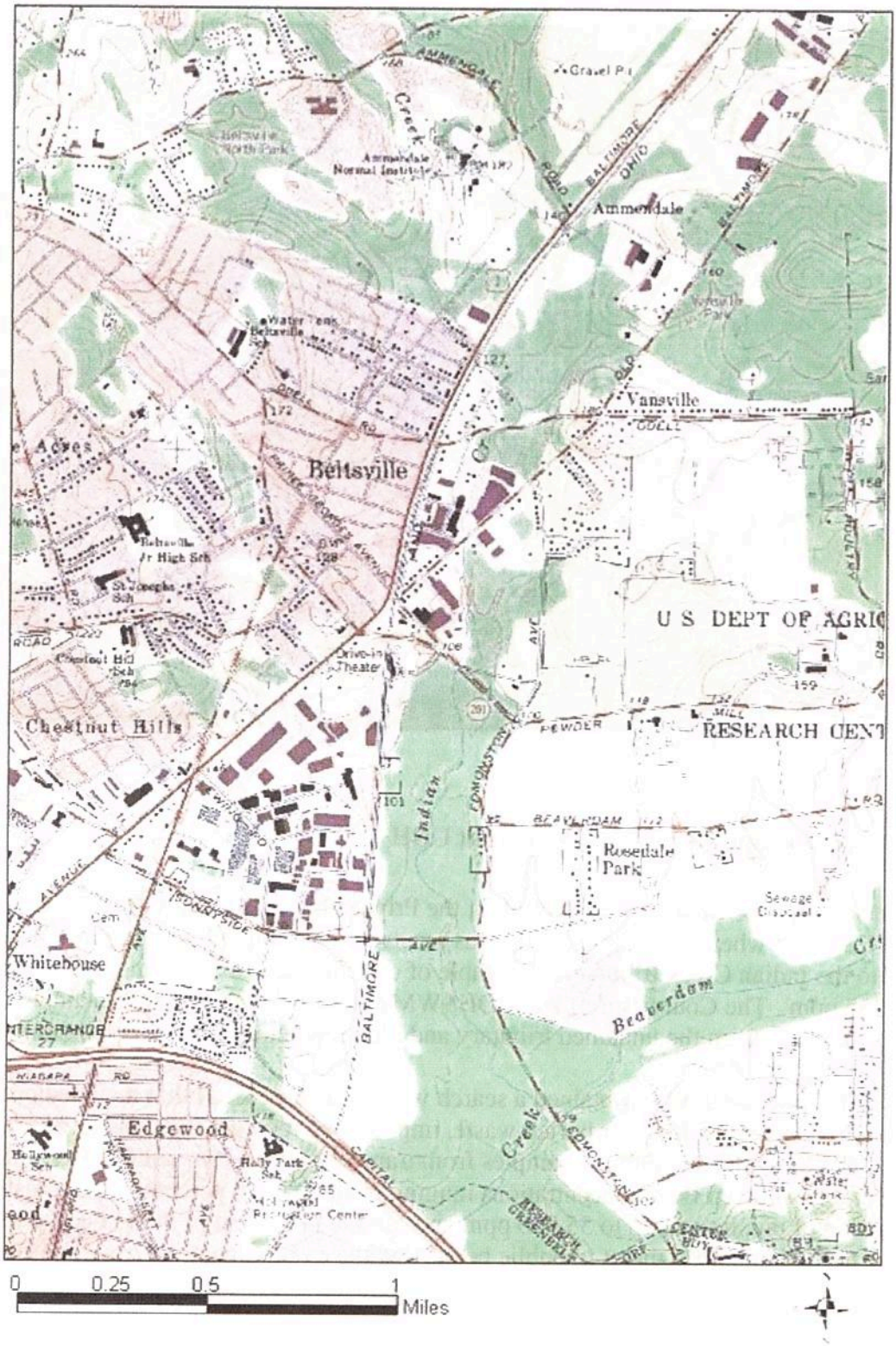
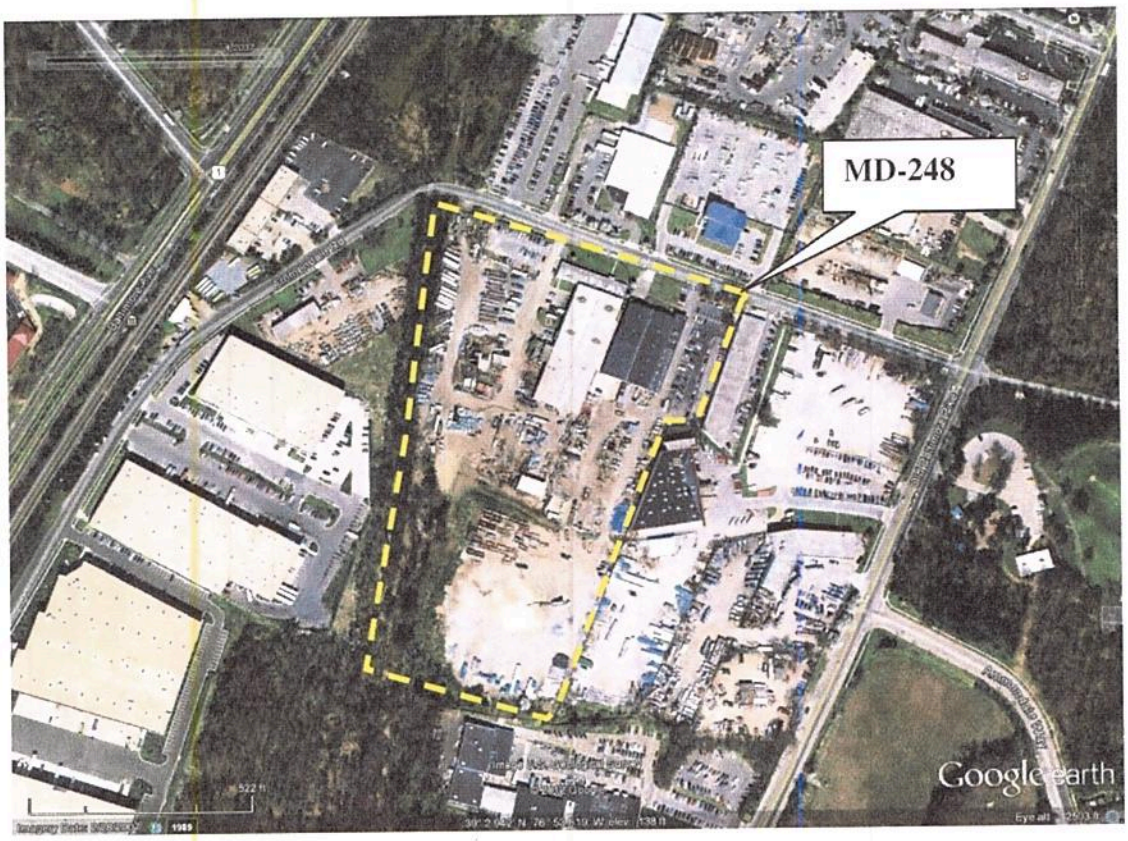


Figure 3: Street Map



2.1 Permitting and Regulatory Actions at URH

URH activities first came to the attention of the Prince George's County Health Department on March 28, 1985 when an anonymous tip was received regarding oil draining from a drainage culvert into the Indian Creek tributary. A sample of oil and water taken from this area identified PCBs at 235 ppm. The County informed MDHSWMA. HWSF collected more samples of soil, water and sediment from the unnamed tributary and identified more PCB contamination.

On May 1, 1985, the HWSF obtained a search warrant against URH that included provisions for digging trenches, searching for buried waste, impounding records, and conducting extensive sampling. HWSF collected multiple samples from transformers and on- and off-site soils. This preliminary data showed PCB concentrations ranging from 50 to 80 percent in the transformers, contamination of on-site soil up to 55,000 ppm and off-site migration of PCBs was up to 2,000 ppm. Due to the immediate threat to public health and the environment, EPA was notified of the situation. EPA subsequently ordered an emergency cleanup under CERCLA.

On May 8, 1985, EPA and MDHSWMA assessed the area and found severely stained soils, oil sheens in drainage culverts leading into the adjacent stream, and more than 760 transformers on site, many of which were leaking. Between May 13 and July 8, 1985, a total of 565 soil and drum samples were collected to determine levels of cleanup activities. Laboratory results showed PCB concentrations up to 955,522 ppm in transformers and up to 128,000 ppm in soils.

On May 9, 1985 it was found that the on-site burning of PCBs may have occurred, which increased the possibility of dioxins on site. EPA sampled for dioxin in a burn area on the northern end of the property and results did not identify dioxin contamination.

On May 21, 1985, trenching activities uncovered materials believed to contain asbestos. Sample results showed from 1 percent to 70 percent asbestos in several areas on site. The asbestos was subsequently removed from the site.

2.2 Environmental and Regulatory Actions

EPA initiated the PCB cleanup and removal in late May 1985. By the end of June, Potomac Electric Power Company, which owned most of the transformers, took over the remediation, which was completed in January 1986. Between July 25 and December 17, 1985, a total of 553 truckloads of PCB-contaminated soil and debris totaling approximately 7,728 cubic yards were removed from site and sent to Model City, New York for disposal.

3.0 ENVIRONMENTAL SETTING

3.1 Water Supply

Nearly all of the residences and most businesses in Prince George's County utilize municipal water and sewer from the Washington Suburban Sanitation Commission (WSSC). WSSC is the 8th largest water and wastewater utility in the nation and serves nearly 1.8 million customers in Prince George's and Montgomery counties. WSSC supply comes from [redacted] is used as an emergency supply. The total amount of water supply available at reservoir capacity is over 14 billion gallons. WSSC maintains over 5,400 miles of drinking water pipeline and over 5,300 miles of sewer pipeline.

According to MDE well data files, there are approximately 47 domestic use wells within the 4-mile groundwater Target Distance Limit (TDL). Census data for the year 2010 indicates 2.76 persons per household in Prince George's County. Therefore approximately 128 people utilize domestic well supply in the 4-mile TDL. The total number of wells in the 4-mile groundwater TDL is outlined in Table 1.

Table 1: Domestic and Community Wells Within 4-Mile Radius of Site

Distance from the site (miles)	Estimated # of Private Domestic Wells	Estimated Population Served by Domestic Wells*	Farm Wells	Industrial Wells
0 – ½	1	2	0	4
½ – 1	0	0	0	0
1 – 2	0	0	0	3
2 – 3	8	22	3	19
3 – 4	38	104	1	1
Total	47	128	4	27

*http://quickfacts.census.gov/ indicates 2.76 persons per household in Prince George's County (Census 2010).

No surface water intakes exist within two miles of the site. There are two wellhead protection areas within the 4-mile TDL of the site for the U.S. Department of Agricultural Research Center located to the southeast.

3.2 Surface Water

The unnamed tributary of Indian Creek flows southerly for approximately 0.4-mile before discharging into Indian Creek. Indian Creek flows southerly for approximately 8.6 miles before discharging into the Anacostia River. The fifteen-mile surface water target distance limit terminates near the John Phillips Sousa Bridge crossing of the Anacostia River. Indian Creek and its unnamed tributary adjacent to the URH site are Use I designated water bodies (Figure 4). This designation assigns use for water contact recreation and protection of nontidal warmwater aquatic life. Wetlands are associated with the unnamed tributary of Indian Creek and Indian Creek itself (Figure 5). The adjacent lands of the unnamed tributary and Indian Creek lie within 100 and 500 year floodplains (Figure 6).

Figure 4: Prince George's County Stream Designation Map

Figure 5: Wetlands Map

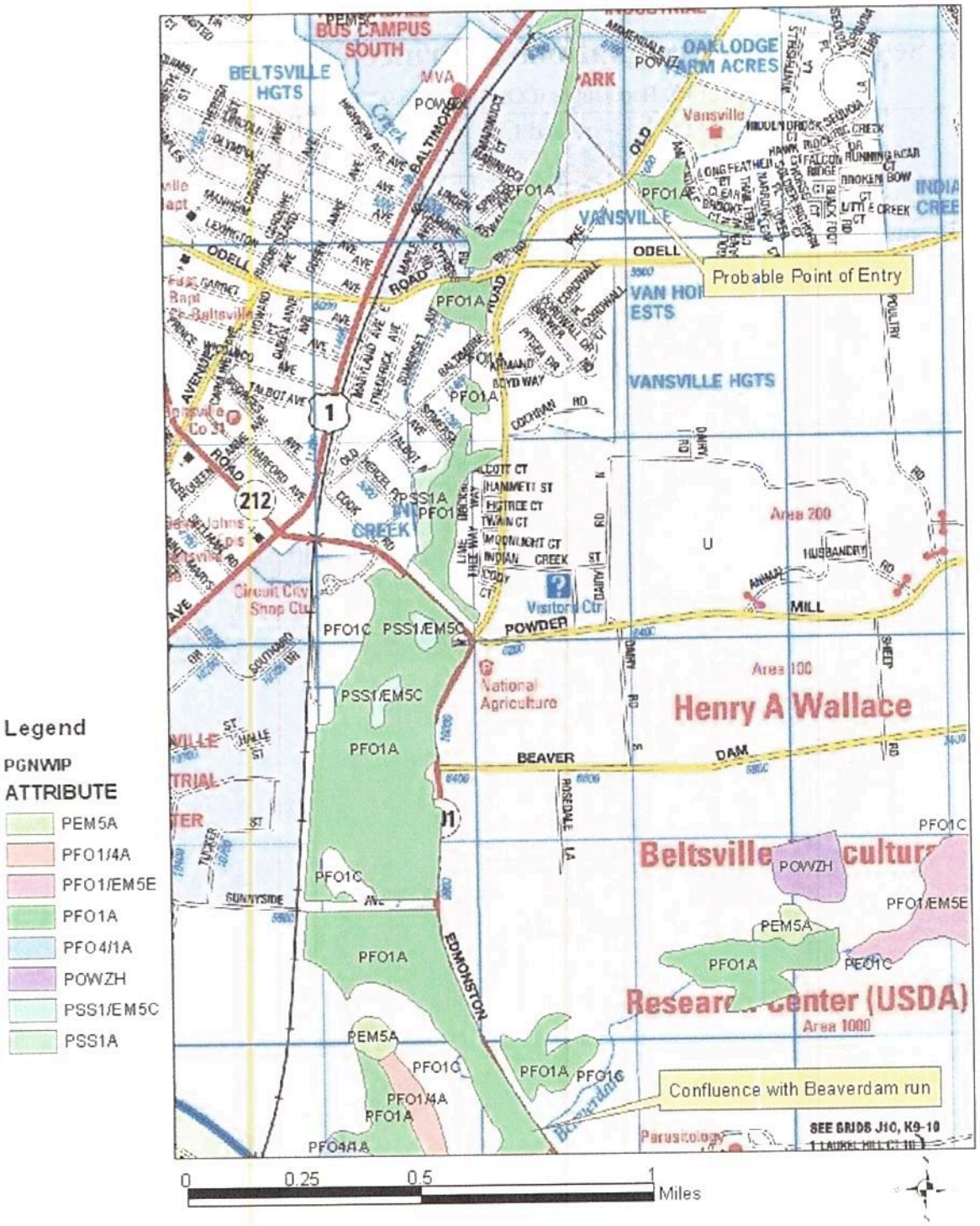
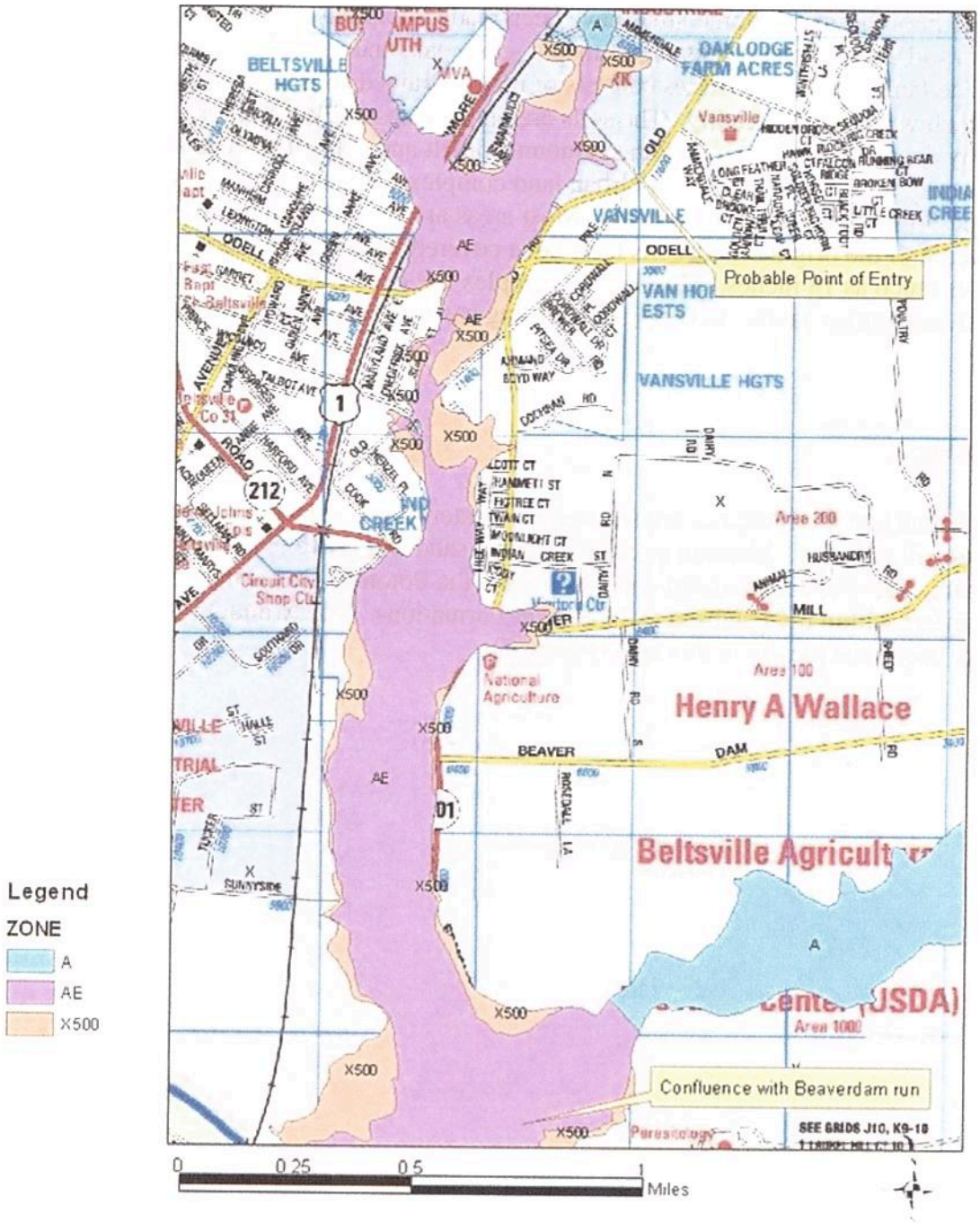


Figure 6: Floodplain Map



3.3 Soils

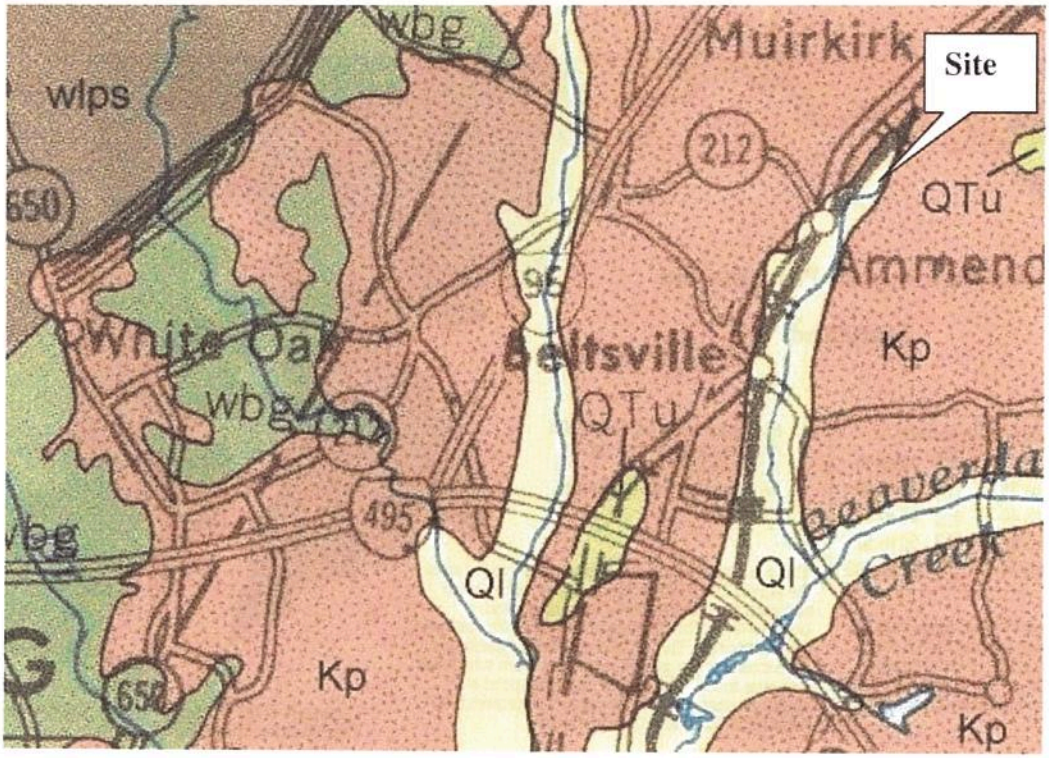
The surface water system in this study cuts through three separate soil series, the Bibb silt loam, the Fallingston loam series and the Iuka-Urban land complex. Except for the silt loam

surface layer that is about three feet thick, the Bibb silt loam A and B soil horizons are sandy loam. The C horizon occurs at a depth of more than four feet. In wet periods, the water table in the Bibb soils is at or near the surface and is subject to flooding. Residential use is limited by flooding and poor drainage. Some areas have been made into parks and playgrounds. Most areas of this soil are in forest consisting of maple, gum, oak, and other hardwoods that tolerate wetness. The Fallingston loam series consists of poorly drained soils that have a gray subsoil through which water moves readily. The soils are on the Coastal Plains, where they developed on old sandy deposits containing moderate amounts of silt and clay. They occur on uplands, chiefly in nearly level areas. The Iuka-Urban land complex consists of Iuka soils on flood plains that are used for community developments. Most areas are nearly level, but some are gently sloping. Much of the original Iuka soils have been covered with miscellaneous soil materials to a depth of as much as 18 inches. Most of this complex has been filled for streets, buildings, parking lots, and playgrounds. In some areas, filling has reduced the severity or frequency of floods.

3.4 Geology

Indian Creek and its tributaries are situated on Quaternary lowlands deposits that consist of gravel, sand, silt and clay. Medium to coarse grained sand and gravel, cobbles and boulders exist near the base. These unconsolidated deposits overlie the Potomac Group that features heavily utilized aquifers within the Patapsco and Patuxent Formations. The Arundel Clay, which acts as an aquitard, may exist locally in this area (Figure 7).

Figure 7: General Geologic Map of the Vicinity



Ql The Quaternary lowland deposits consist of gravel, sand, silt and clay from 0 to 150 feet deep. Medium- to coarse-grained sand and gravel; cobbles and boulders are found near the base. These deposits commonly contain reworked Eocene glauconite; varicolored silts and clays; brown to dark gray lignitic silty clay.

3.5 Meteorology

Prince George's County has a humid, continental climate with well-defined seasons. The warmest part of the year is July and the coldest is the last part of January. Annual temperatures range from 90° F to 20° F. Prevailing winds are from the west-northwest to northeast. From May through September, the winds become more southerly. The average annual wind speed is approximately 10 miles per hour. The average annual rainfall is 43 inches per year and the annual evaporation is 35 inches per year producing a net precipitation of 8 inches per year (Figure 8). The 2-year 24-hour rainfall is 3.5 inches in Prince George's County (Figure 9).

Figure 8: Precipitation Map

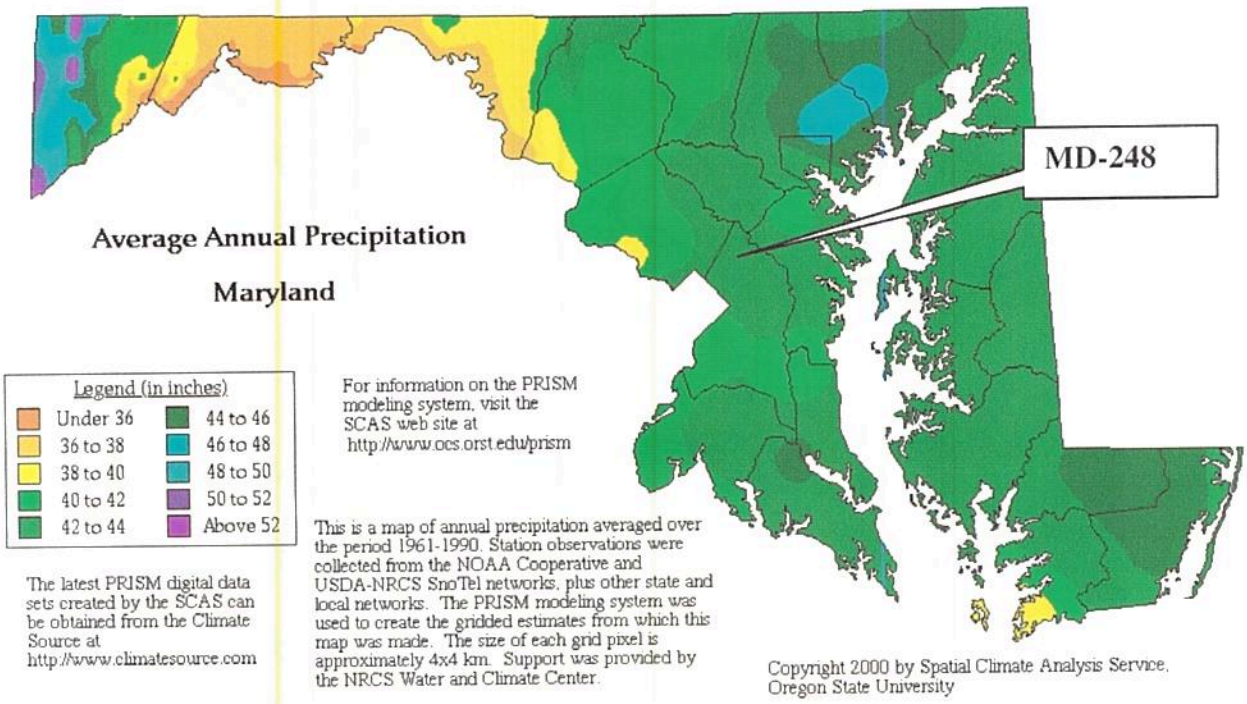
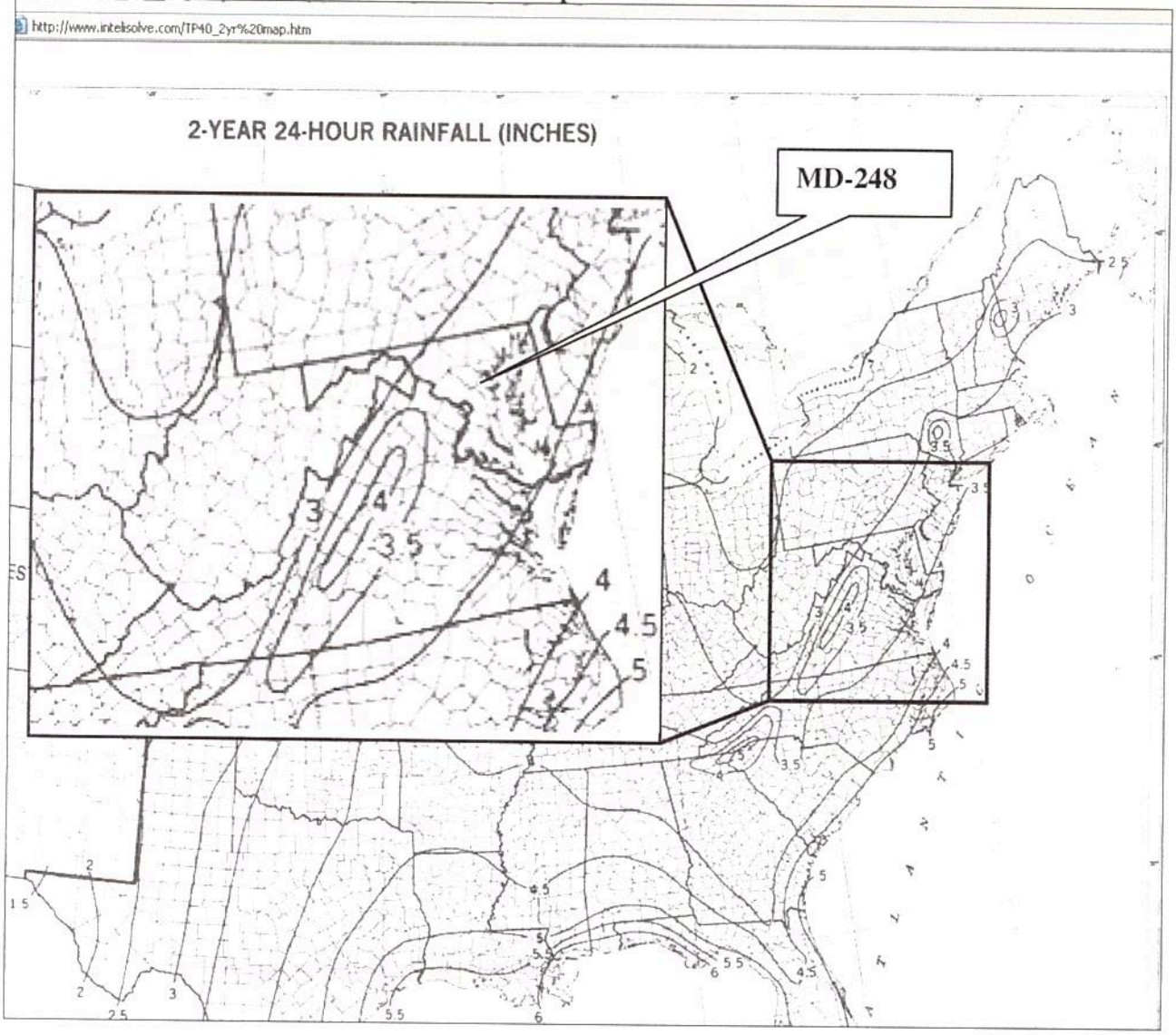


Figure 9: 2 Year/24 Hour Rainfall Map



3.6 Nearby Land Use and Population Distribution

This area in the vicinity of Indian Creek and its unnamed tributary adjacent to the URH site is nearly entirely industrial upstream from Powder Mill Road (Figure 10). The approximate population within the 4-mile Target Distance Limit of the site was calculated from the EPA ENVIROMAPPER website and is outlined in Table 2.

Figure 10: Land Use in the Vicinity of Indian Creek and Its Unnamed Tributary

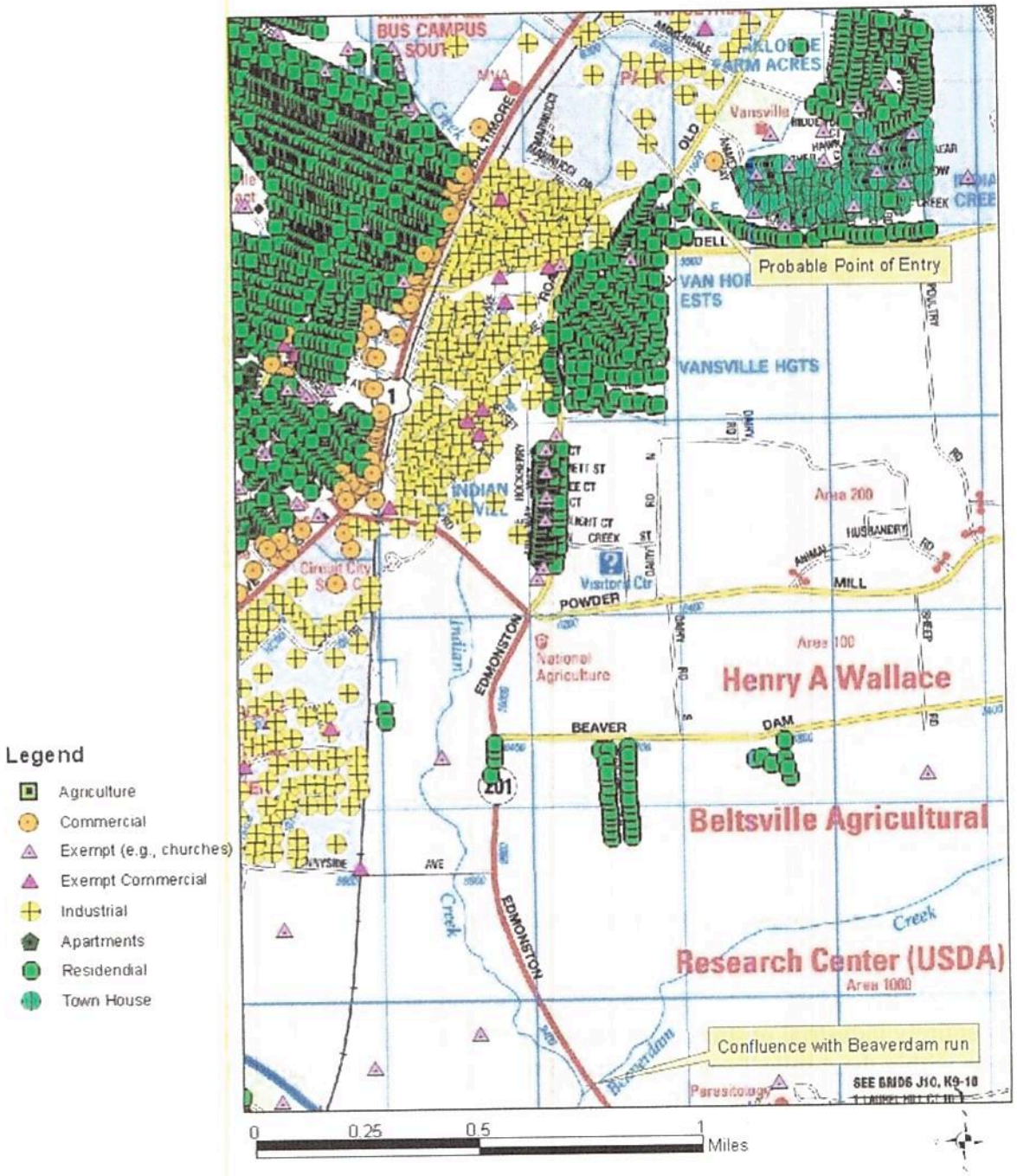


Table 2: Population Distribution Within 4 Miles of the Site

Distance from the site (miles)	Estimated Population from 2010 Census
0 – 1/4	154
1/4 – 1/2	588
1/2 – 1	2,379
1 – 2	8,771
2 – 3	38,446
3 – 4	68,132
Total	**118,470**

4.0 WASTE DESCRIPTION

URH was in the business of acquiring, stockpiling, and salvaging electrical transformers for the scrap metal value. At the time of the May 8, 1985 assessment, more than 760 transformers were identified on site. Many of these transformers contained PCBs and were leaking. By the end of the emergency removal, a total of 787 transformers owned by PEPCO and 55 Electric Equipment Corporation of Virginia were removed from the site. A total of 553 truckloads of PCB-contaminated soil and debris were also removed from the site.

5.0 PREVIOUS STUDIES

In June 1990, NUS Corporation completed a Site Inspection of the URH site. A total of four surface water, five sediment and five soil samples were collected. PCBs were found at low levels in many of the on-site soil and sediment samples. The highest concentration, 3.6 ppm was identified in a sediment sample collected at the end of a drainage pipe on site that ultimately drains towards the unnamed tributary of Indian Creek.

6.0 MDE CONTRACT LABORATORY PROTOCOL (CLP) SAMPLING

EPA Region III approved the ESI Sampling and Analyses Plan on January 29, 2013. Sampling was conducted on December 12, 2013 in accordance with the plan and the procedures outlined in EPA's CLP Routine Analytical Services Case Number 43975 and MDE's Standard Operating Procedures document.

This ESI evaluated the potential migration of residual PCBs from the 1985 emergency removal into the adjacent unnamed tributary of Indian Creek, Indian Creek itself and therefore, potentially into the Anacostia River. Subaqueous sediment samples were collected from several areas in the unnamed tributary of Indian Creek and Indian Creek itself as well as Beaverdam Creek located approximately 2.5 miles downstream from URH. All samples were collected and submitted for analysis in accordance with the CLP Routine Analytical Services and were analyzed for Target Compound List (TCL) PCBs using EPA method SOM01.2. CLP protocol was followed throughout the sample collection and submittal (U.S. EPA, "Contract Laboratory

Program Guidance for Field Samplers," January 2011). The quality control used by MDE includes the submittal of a field duplicate for each matrix, as defined above. In addition, a solid and aqueous matrix spike sample was collected at specified additional volumes for CLP matrix spike quality control procedures. The sample rationale is outlined in Table 3.

Table 3: Sampling Rationale

SEDIMENT SAMPLES		
Sample #	Sample Location	Rationale
URH-SED-1	Upstream of Ammendale Rd (background).	Characterize background.
URH-SED-2	Near outfall of surface sewer on former URH property (potential PPE).	Characterize potential PPE.
URH-SED-3	Sediment in unnamed tributary west of URH.	Characterize sediment in the unnamed tributary of Indian Creek.
URH-SED-4	Sediment in unnamed tributary west of URH.	Characterize sediment in the unnamed tributary of Indian Creek.
URH-SED-5	Sediment in unnamed tributary west of URH near former transformer area (potential PPE).	Characterize another potential PPE.
URH-SED-6	Sediment in unnamed tributary upstream from Recover One Towing & Recovery Co.	Characterize sediment in the unnamed tributary of Indian Creek prior to potential impacts from vehicle recovery operation.
URH-SED-7	Sediment in unnamed tributary downstream from Recover One Towing & Recovery at confluence with Indian Creek.	Characterize impacts to the sediment in the unnamed tributary of Indian Creek from the vehicle recovery operation.
URH-SED-8	Indian Creek just upstream from confluence with the unnamed tributary west of URH.	Characterize Indian Creek prior to impacts from the unnamed tributary.
URH-SED-9	Indian Creek downstream from Old Baltimore Pike.	Characterize sediments in Indian Creek.
URH-SED-10	Indian Creek upstream from Powder Mill Rd *(MS/MSD)*.	Characterize sediments in Indian Creek and serve at the *MS/MSD*.
URH-SED-11	Indian Creek upstream from Sunnyside Ave.	Characterize sediments in Indian Creek.
URH-SED-12	Indian Creek upstream with confluence of Beaverdam Creek.	Characterize sediments in Indian Creek.
URH-SED-13	Beaverdam Creek upstream with confluence of Indian Creek east of Edmonston Rd.	Characterize potential impacts to the sediments in Indian Creek from Beaverdam Creek discharge.
URH-SED-14	Field duplicate of URH-SED-2	*QA/QC*
URH-SED-15	Field duplicate of URH-SED-5	*QA/QC*

Figure 11a: Sampling Locations (and Sample Results) along the Unnamed Tributary of Indian Creek (URH-SED-1 through -6)

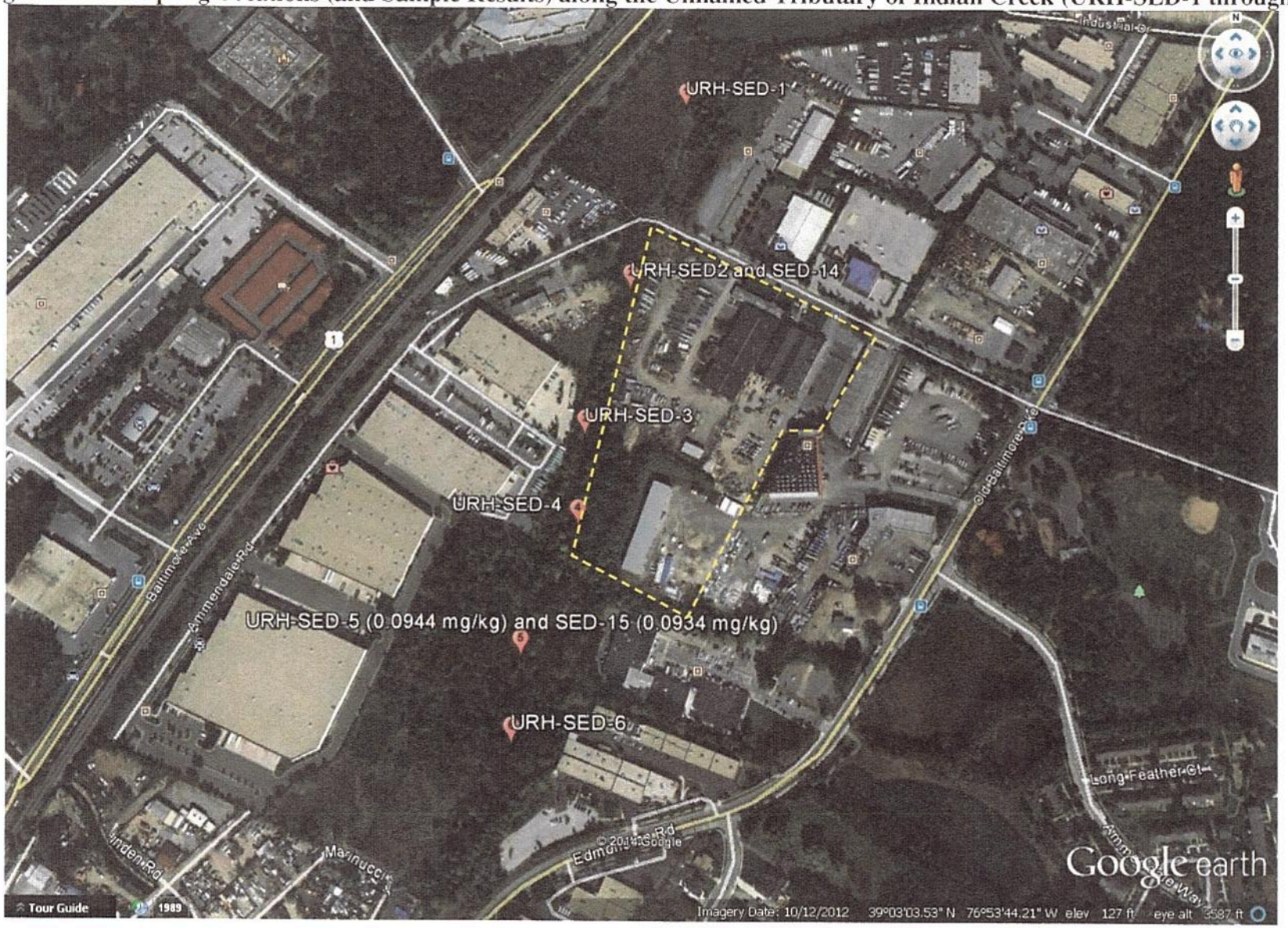


Figure 11b: Sampling Locations Near the Confluence of Indian Creek and its Unnamed Tributary (URH-SED-7, -8)

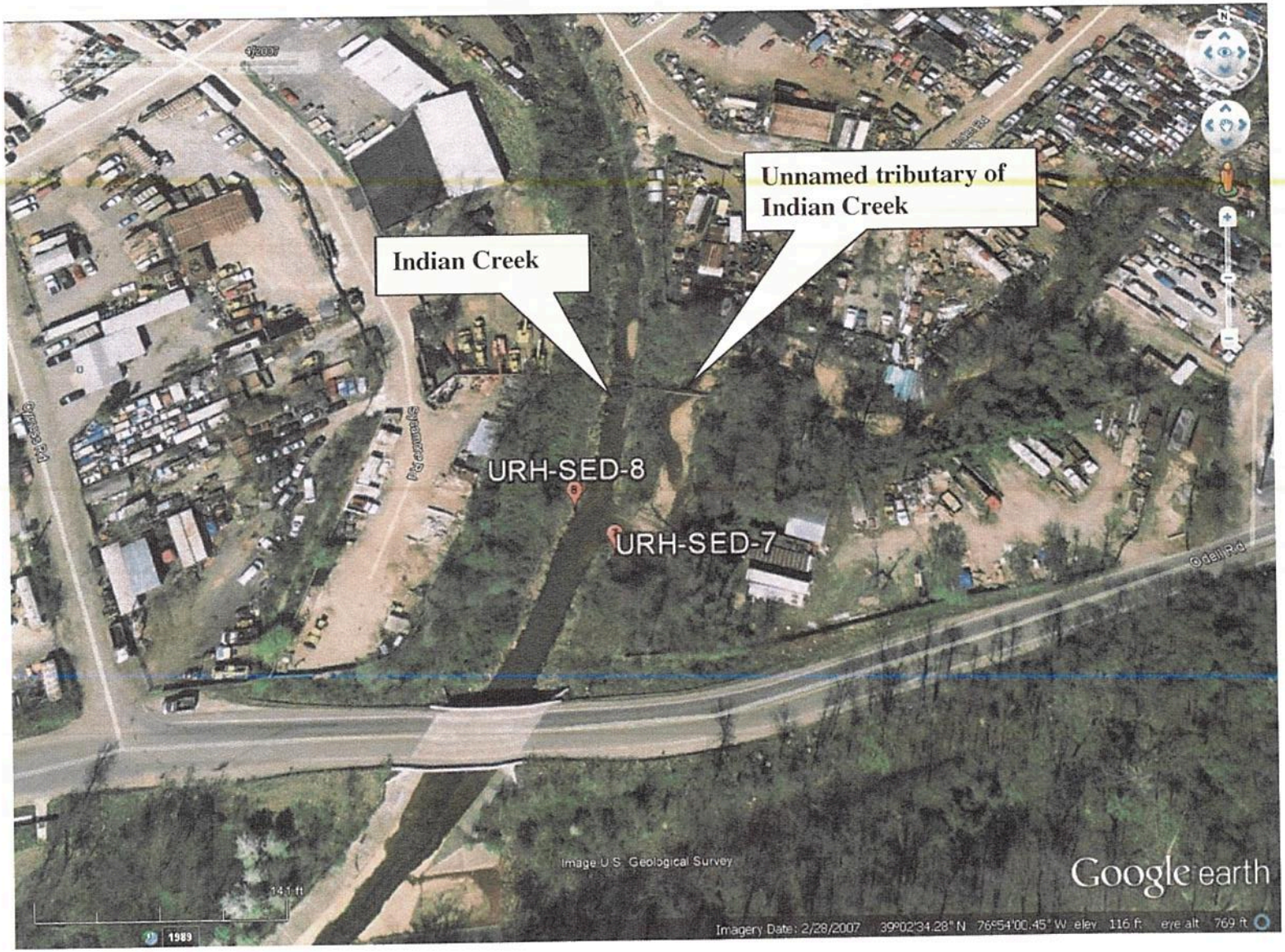


Figure 11a: Sampling Locations (and Sample Results) along the Unnamed Tributary of Indian Creek (URH-SED-1 through -6)

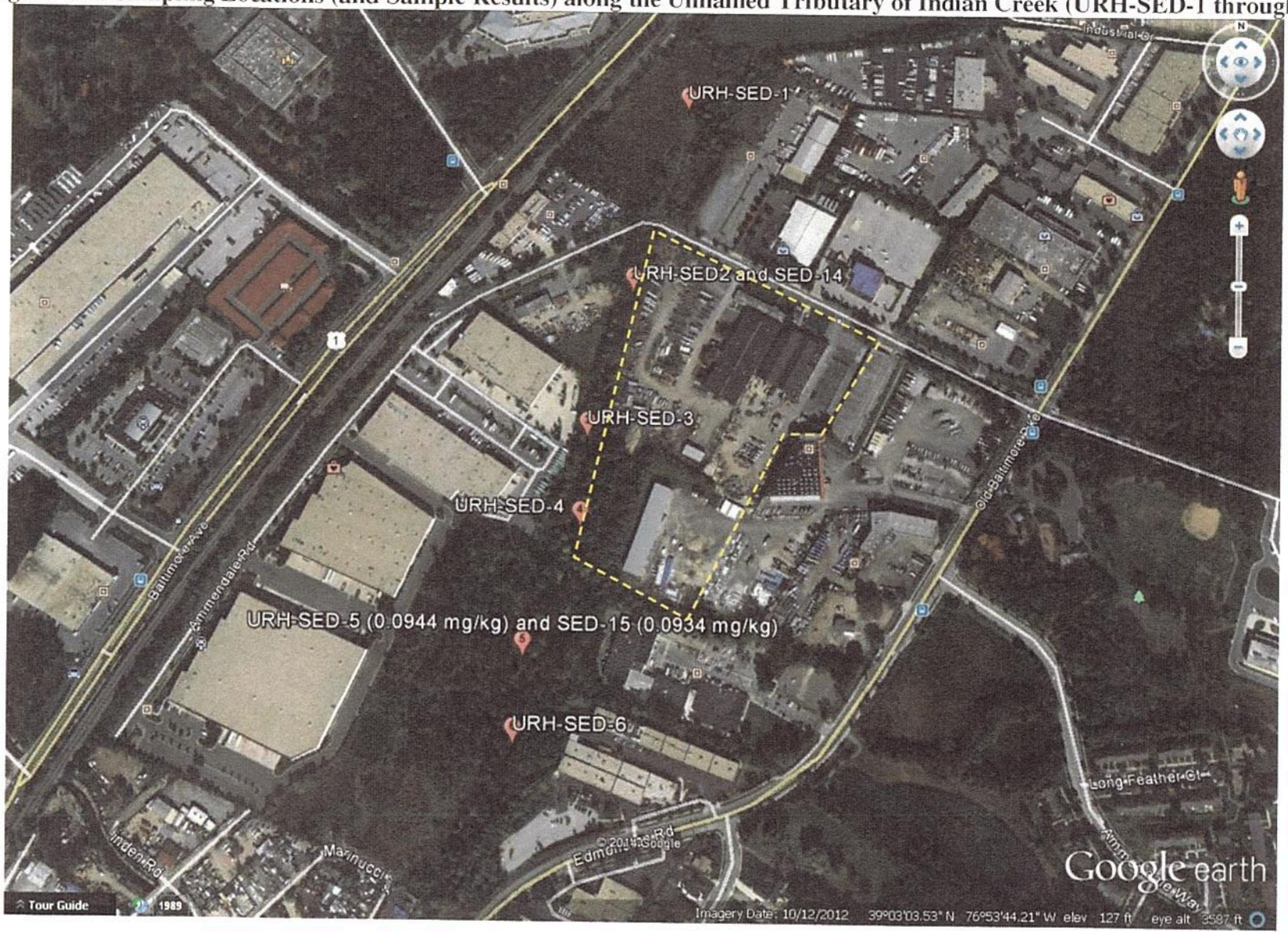


Figure 11b: Sampling Locations Near the Confluence of Indian Creek and its Unnamed Tributary (URH-SED-7, -8)

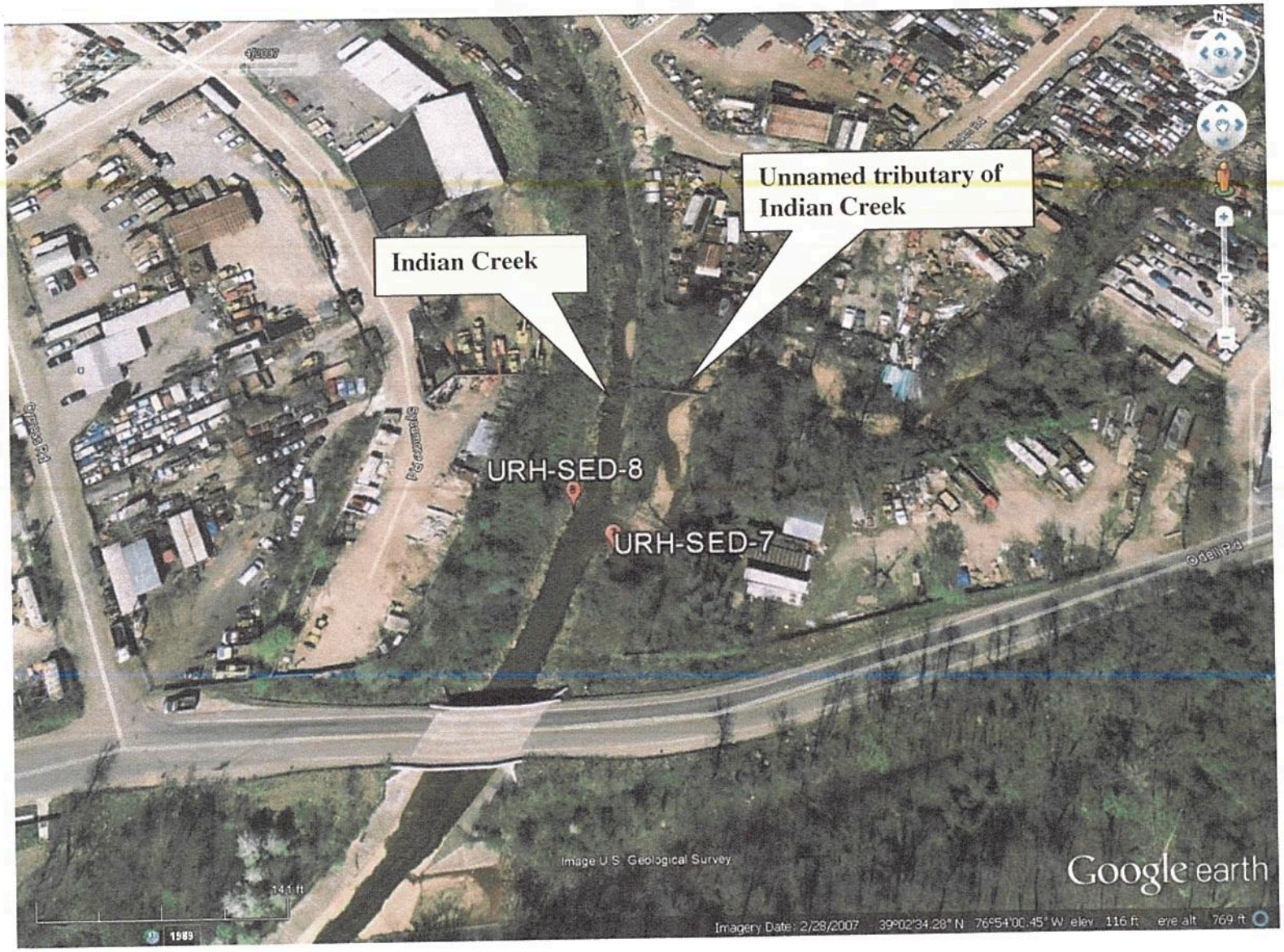


Figure 11c: Sampling Locations of Indian Creek (URH-SED-9 and -10)

Figure 11d: Sampling Locations of Indian Creek and Confluence with Beaverdam Creek (URH-SED-11, -12, -13)

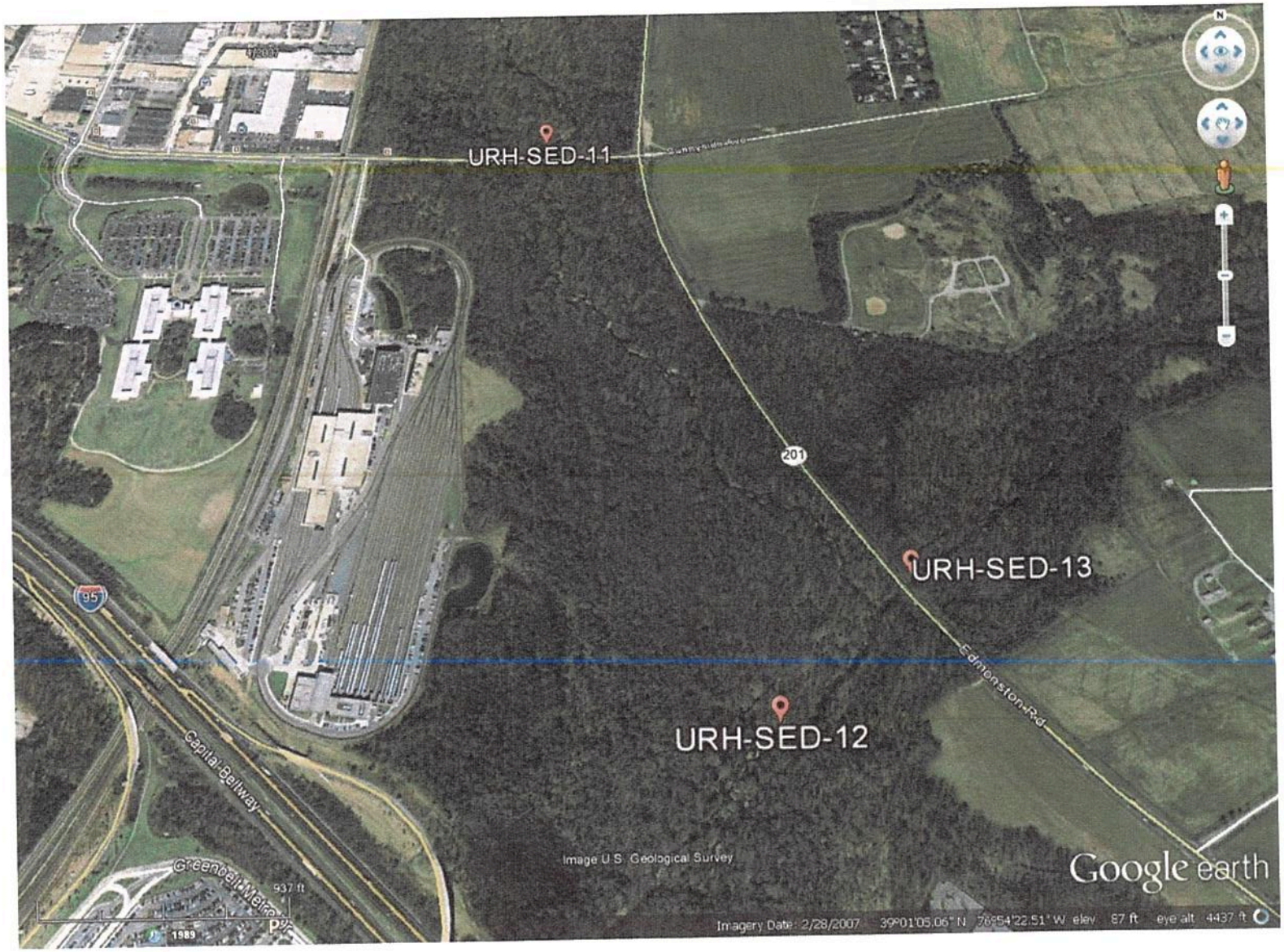


Table 4: Global Positioning System Coordinates

Sample ID	Northing	Easting
URH-SED-1	39° 03.093′	76° 53.688′
URH-SED-2	39° 02.984′	76° 53.725′
URH-SED-3	39° 02.911′	76° 53.747′
URH-SED-4	39° 02.855′	76° 53.759′
URH-SED-5	39° 02.818′	76° 53.764′
URH-SED-6	39° 03.744′	76° 53.770′
URH-SED-7	39° 02.569′	76° 53.978′
URH-SED-8	39° 02.583′	76° 53.984′
URH-SED-9	NA	NA
URH-SED-10	39° 02.046′	76° 54.120′
URH-SED-11	39° 01.393′	76° 54.190′
URH-SED-12	39° 00.869′	76° 53.973′
URH-SED-13	39° 00.969′	76° 53.846′
URH-SED-14 (duplicate of URH-SED-2)	*see URH-SED-2*	
URH-SED-15 (duplicate of URH-SED-5)	*see URH-SED-5*	

6.1 Sediment Sampling Results

MDE collected fourteen sediment samples including two field duplicates via plastic dipper and disposable plastic scoops. The sediment samples were collected in an unnamed tributary of Indian Creek, which parallels URH, Indian Creek itself and Beaverdam Creek just upstream from its confluence with Indian Creek (Figure 11a – 11d). Samples were collected starting from downstream to the uppermost sediment sample URH SED-1. Fifteen sediment samples were proposed to be collected for this ESI, however at location URH-SED-9, no subaqueous fines were present in the vicinity. That area contained concrete embankments and concrete channeling that generates too much current and scouring for fine materials to settle out. Therefore, no sediment sample was collected in that area.

Analytical results of the fourteen sediment samples collected as part of this investigation identified Aroclor 1252 in URH Sed-5 and its field duplicate URH Sed-15 at 0.0944 mg/kg and 0.0934 mg/kg respectively (see Figure 11a). There were no other PCBs detected in any other sample.

7.0 MDE TOXICOLOGIAL EVALUATION SUMMARY

MDE performed a toxicological evaluation of the PCBs analyses obtained from the sediment collected on December 12, 2013 (Appendix B). The major highlights regarding the preparation of the evaluation are as follows:

- A recreational use scenario was assumed for the purpose of estimating risk to potentially exposed populations.
- The potentially exposed populations considered were the child recreational visitor, youth recreational visitor and adult recreational visitor.
- Exposures to sediment.
- The potential exposure routes considered for soil were ingestion, inhalation, and dermal contact.
- Hazard indices and cancer risk values were calculated two ways; risk evaluations for all populations using maximum detected concentrations, and risk evaluations using 95% upper confidence limit (UCL) as the site-wide average concentration.

EPA has recommended default exposure parameters that were used to estimate cumulative risk from all chemicals. EPA recognizes as an acceptable Hazard Index (HI) values less than or equal to 1 for noncarcinogenic chemicals and an excess lifetime cancer risk (CR) less than or equal to 10^{-6} to 10^{-5} for carcinogenic chemicals. MDE recognizes as an acceptable HI value less than or equal to 1 and excess lifetime CR less than or equal to 10^{-6} to 10^{-5}. The Toxicological Evaluation did not identify any Hazard Indices or risks to any recreational population.

8.0 FINDINGS AND CONCLUSION

Analytical results of the fourteen sediment samples, including two field duplicates, collected as part of this investigation identified Aroclor 1252 in URH Sed-5 and its field duplicate URH Sed-15 at 0.0944 mg/kg and 0.0934 mg/kg respectively. There were no other PCBs detected in any other sample. The Toxicological Evaluation was prepared using a recreational use scenario of the analytical results from the sediment samples. No Hazard Indices and no risks were identified. Therefore, MDE is recommending no further investigation by EPA of PCBs migration from the URH site at this time.

9.0 REFERENCES

1. MDE Land Management Administration Solid Waste Program, Land Restoration Program (LRP) and Geographical Information System files.
2. MDE Land Management Administration files.
3. http://www.dat.state.md.us.
4. MDE LRP personnel site visits.
5. MDE Water Management Administration Well Database.
6. http://ocs.orst.edu/pub/maps/Precipitation/Total/States/MD/md.gif
7. U.S. Environmental Protection Agency, November 2013, Risk-Based Concentration Tables, Region III.
8. http://www.mde.maryland.gov/programs/land/marylandbrownfieldvcp/mdvcpinformation/documents/www.mde.state.md.us/assets/document/mde%20soil%20and%20groundwater%20cleanup%20standards%20doc%204-11-08(1).pdf
9. http://quickfacts.census.gov/qfd/states/24/24005.html
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12. http://geopubs.wr.usgs.gov/open-file/of03-251/of03-251.pdf
13. http://www.wsscwater.com/home/jsp/content/about-wssc
14. http://archive.orr.noaa.gov/book_shelf/122_NEW-SQuiRTs.pdf

10.0 PHOTODOCUMENTATION

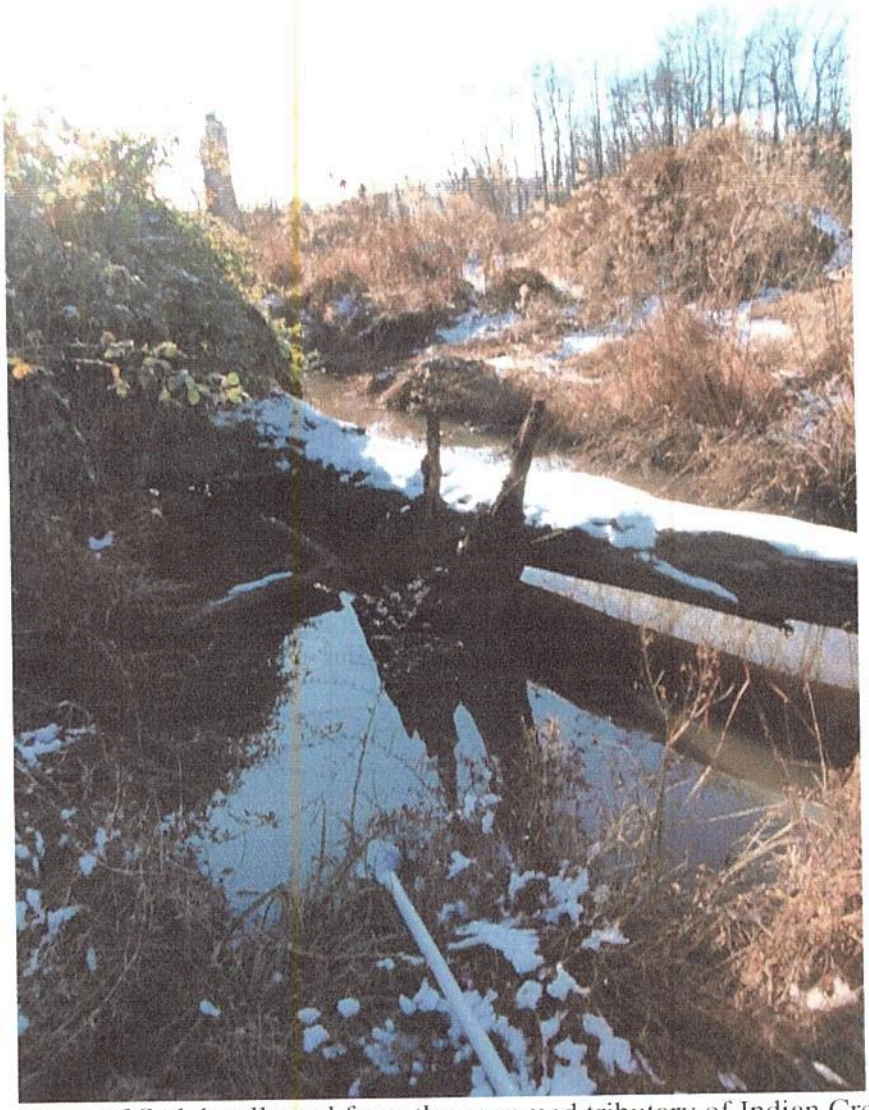


Photo of Sed-1 collected from the unnamed tributary of Indian Creek, facing southwest. The sample was collected approximately 350 feet upstream from the Ammendale Rd bridge. The building visible in the center background is from MV Transportation Contractors that is located at 6500 Ammendale Rd.

Photo of URH Sed-2, facing southeasterly. URH equipment visible in the background.

Photo of the URH equipment in the background from the Sed-3 location.

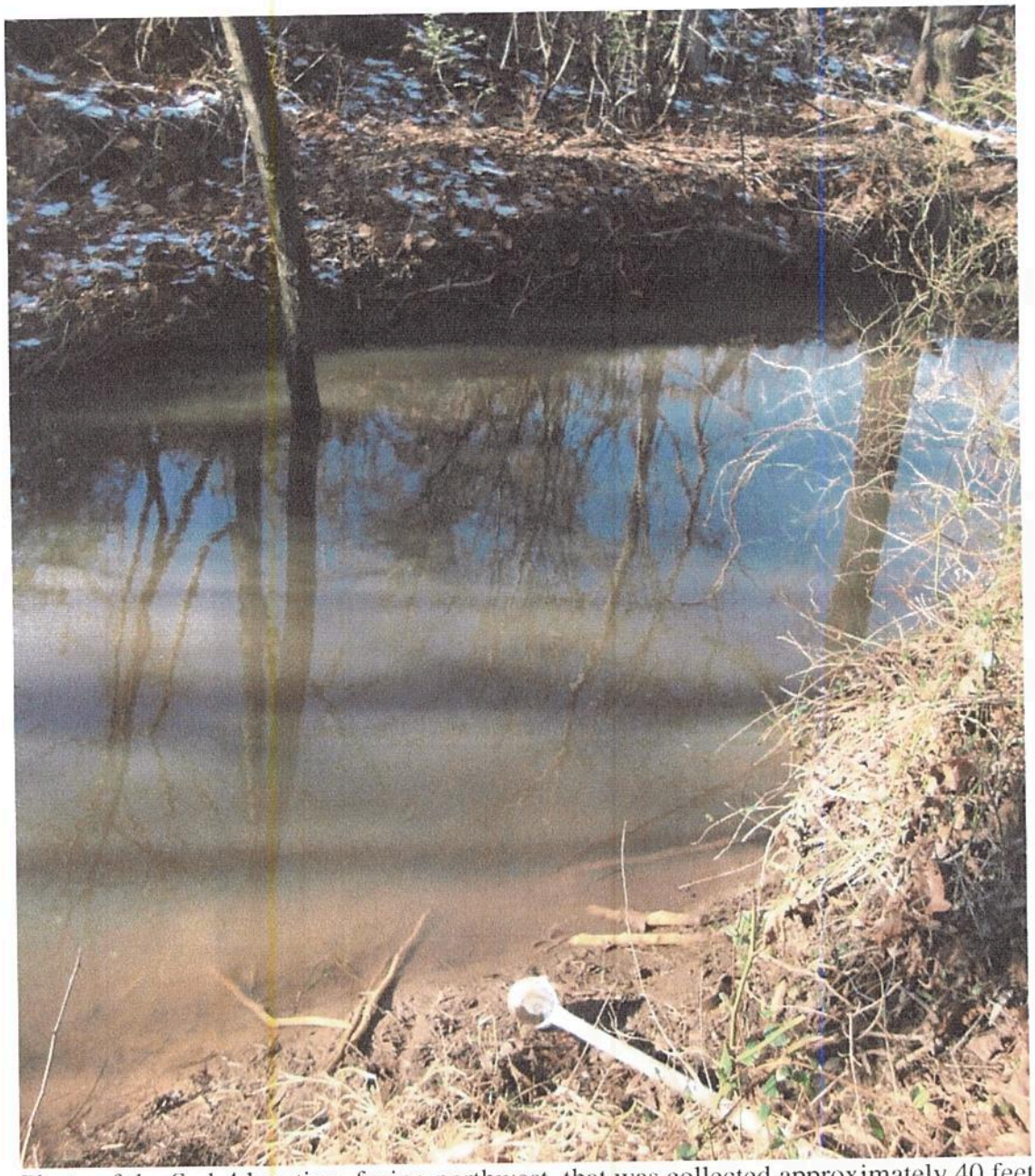


Photo of the Sed-4 location, facing northwest, that was collected approximately 40 feet downstream from a site drainage swale.

Photo of the Sed-5 and Sed-15 location at the terminus of a site drainage swale into the unnamed tributary of Indian Creek, facing northeasterly.

Photo of Sed-6 facing southeast with the southern most building of the Eaton Corporation at 11642 Old Baltimore Pike in the background.

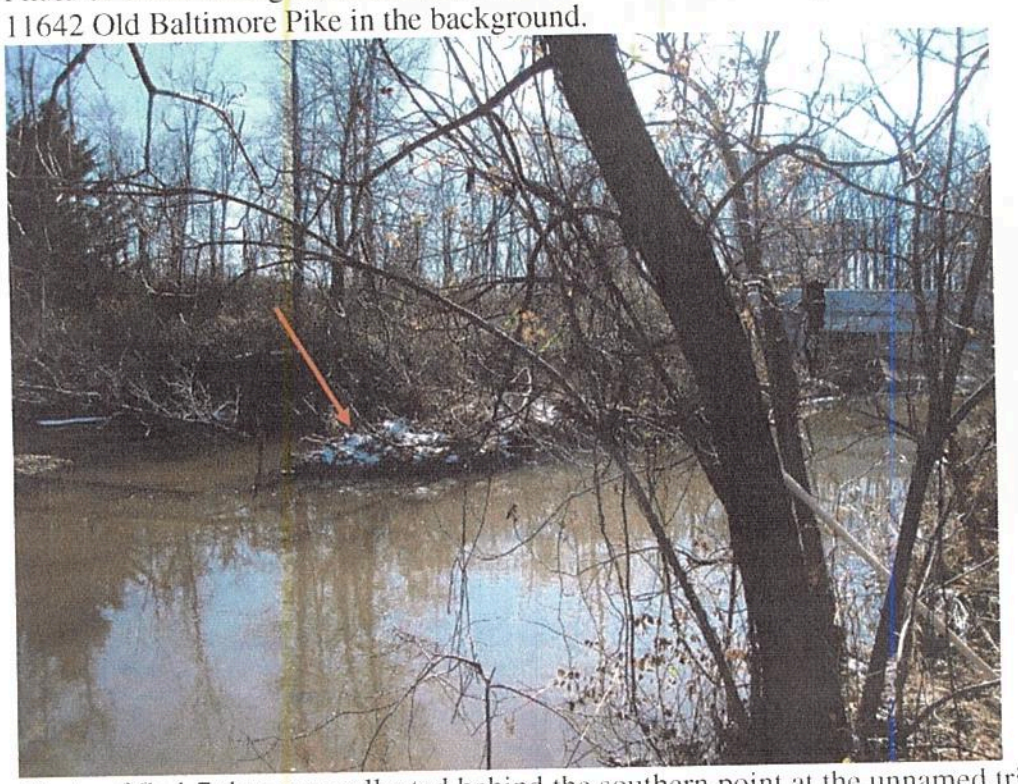


Photo of Sed-7 that was collected behind the southern point at the unnamed tributary's confluence with Indian Creek (foreground). The photo was taken from the Sed-8 location. The Odell Rd bridge is visible in the background to the right.

Photo of Sed-12 that was collected approximately 800 feet downstream from the Rt. 201 (Edmonston Rd) bridge and approximately 650 feet downstream from the confluence of Beaverdam Creek, facing northeast.

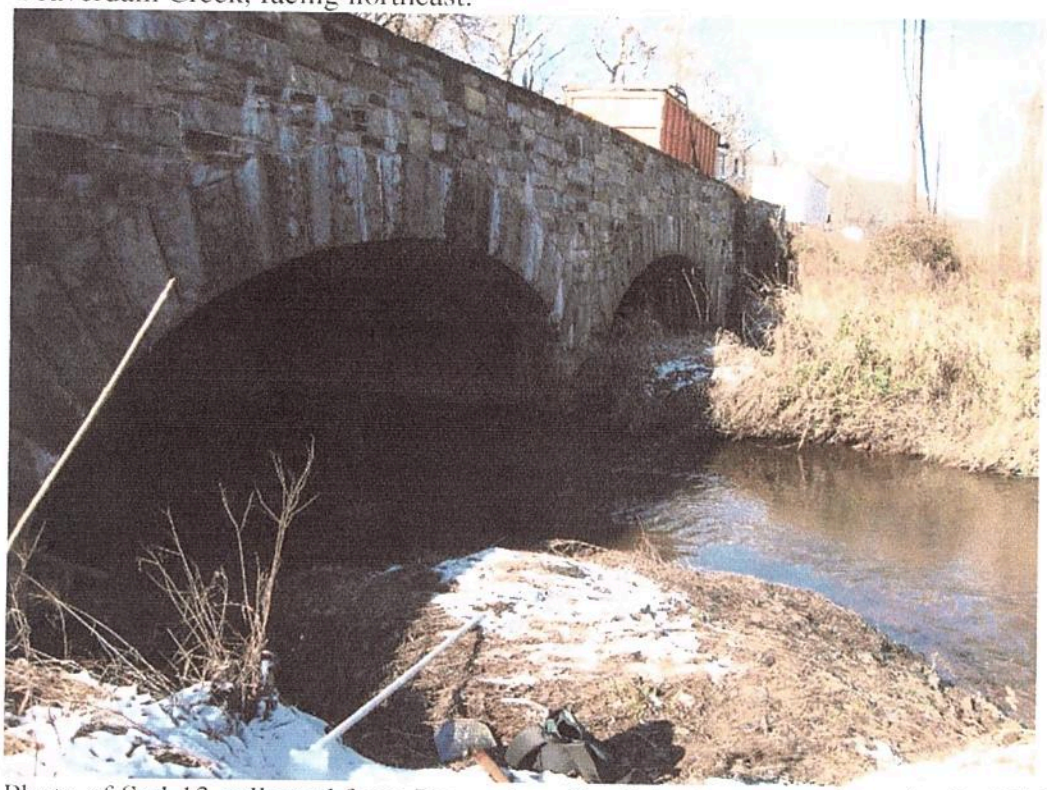
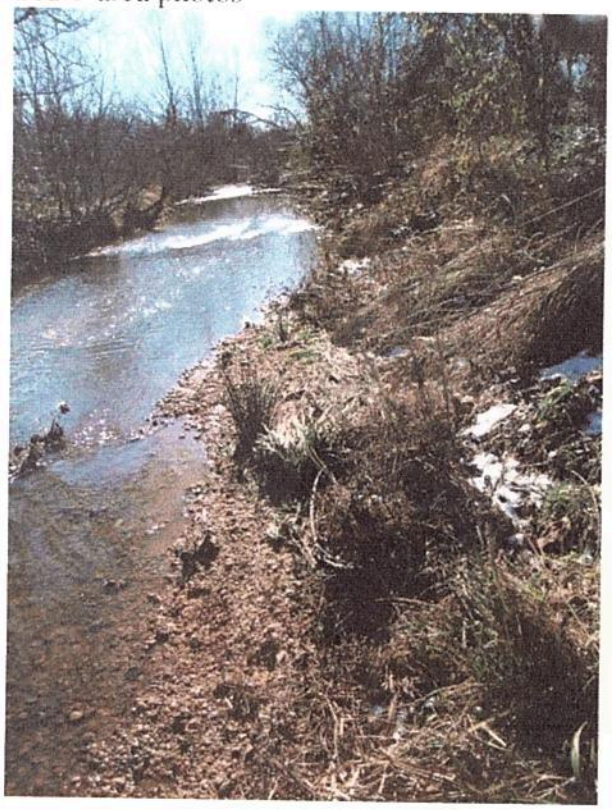
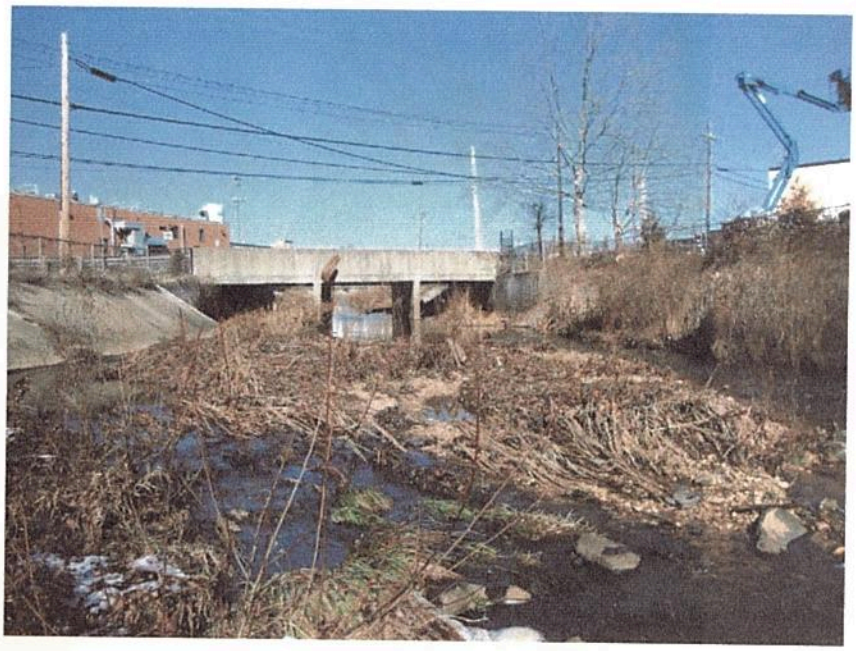
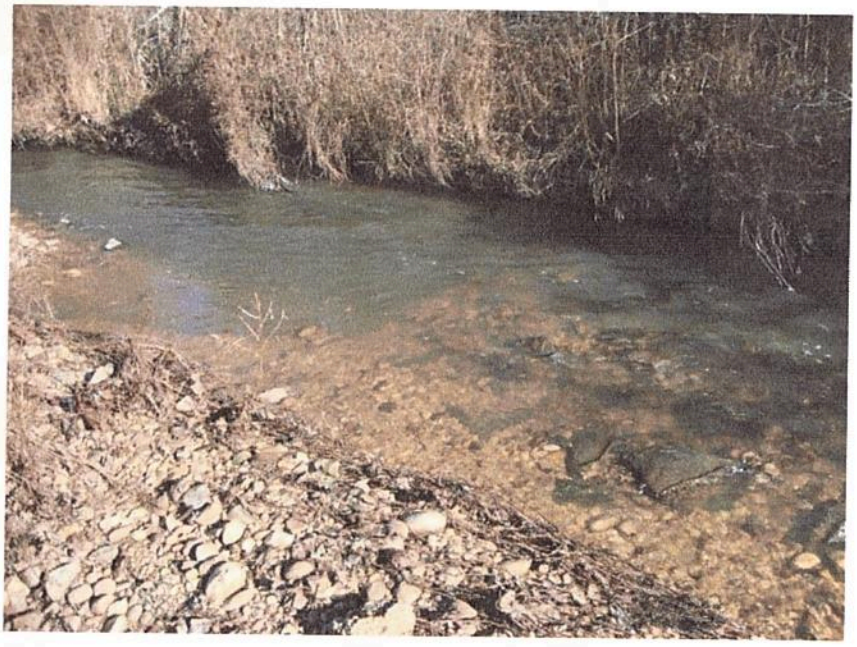


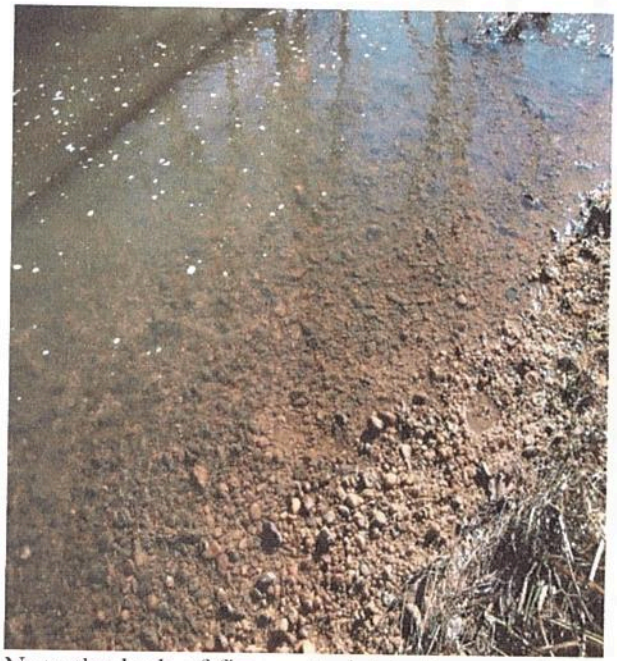
Photo of Sed-13 collected from Beaverdam Creek just upstream from the Rt.201 bridge.

Sed-9 area photos









Note the lack of fine material in the gravel.

Photo of Sed-10 located approximately 200 feet upstream from the Rt. 212 (Powder Mill Rd) bridge.

Photo of Sed-11 located approximately 80 feet upstream from the Sunnyside Ave bridge.

Photo of Sed-12 that was collected approximately 800 feet downstream from the Rt. 201 (Edmonston Rd) bridge and approximately 650 feet downstream from the confluence of Beaverdam Creek, facing northeast.

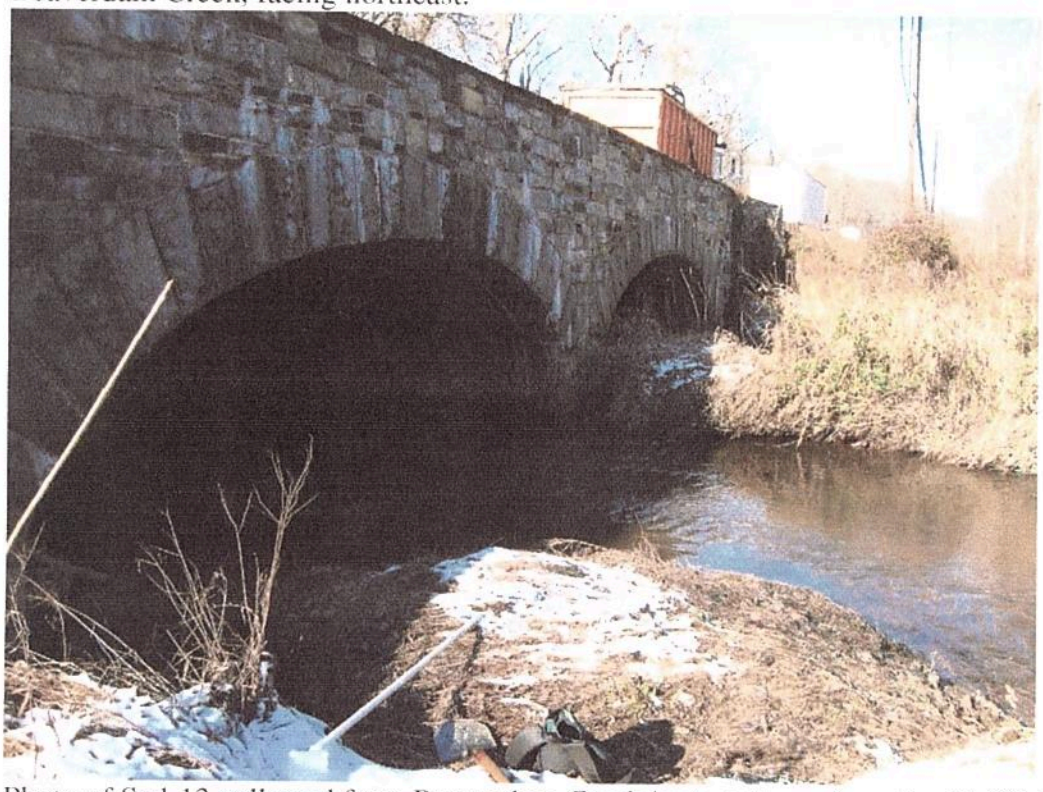


Photo of Sed-13 collected from Beaverdam Creek just upstream from the Rt.201 bridge.

APPENDIX A: FINAL ANALYTICAL REPORT

ORIGINAL

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

Final Analytical Report

Site Name.....	United Rigging & Hauling
Sample Collection Date(s).....	12/12/13 10:35- 12/12/13 14:40
Contact.....	Jan Szaro
Report Date.....	01/31/14 15:45
Project #.....	DAS R34265
Work Order.....	1312013

Analyses included in this report:

PCB Aroclors by CLP Equivalent

Percent Dry Weight (105C) by USGS

Approved for Release

OASQA Representative

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: United Rigging & Hauling **Project #: DAS R34265**

ANALYTICAL REPORT FOR SAMPLES

Station ID	Laboratory ID	Matrix	Date Sampled	Date Received
R34265-URH-SED-1	1312013-01	Sediment	12/12/13 14:40	12/13/13 12:22
R34265-URH-SED-11	1312013-02	Sediment	12/12/13 11:20	12/13/13 12:22
R34265-URH-SED-12	1312013-03	Sediment	12/12/13 10:55	12/13/13 12:22
R34265-URH-SED-13	1312013-04	Sediment	12/12/13 10:35	12/13/13 12:22
R35265-URH-SED-14	1312013-05	Sediment	12/12/13 14:25	12/13/13 12:22
R34265-URH-SED-15	1312013-06	Sediment	12/12/13 13:30	12/13/13 12:22
R34265-URH-SED-10	1312013-07	Sediment	12/12/13 11:40	12/13/13 12:22
R34265-URH-SED-2	1312013-08	Sediment	12/12/13 14:20	12/13/13 12:22
R34265-URH-SED-3	1312013-09	Sediment	12/12/13 13:50	12/13/13 12:22
R34265-URH-SED-4	1312013-10	Sediment	12/12/13 13:40	12/13/13 12:22
R34265-URH-SED-5	1312013-11	Sediment	12/12/13 13:25	12/13/13 12:22
R34265-URH-SED-6	1312013-12	Sediment	12/12/13 13:00	12/13/13 12:22
R34265-URH-SED-7	1312013-13	Sediment	12/12/13 12:20	12/13/13 12:22
R34265-URH-SED-8	1312013-14	Sediment	12/12/13 12:35	12/13/13 12:22

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

ORIGINAL

Site Name: United Rigging & Hauling **Project #: DAS R34265**

USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

Case No: ~~TBD~~
DAS No: R34265
SDG No: L

Date Shipped:	12/12/2013
Carrier Name:	FedEx
Airbill:	8005 1800 4908
Shipped to:	ASQAB US EPA Region III 701 Mapes Road Fort Meade MD 20755 (410) 305-2667

Chain of Custody Record

	Relinquished By	(Date / Time)	Received By	(Date / Time)
1	[signature]	12/12/13 1615	[signature]	12/13/13 12:2
2				
3				
4				

Sampler Signature: [signature]

For Lab Use Only
Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
C04Q9	Sediment/ Phillip Anderson	L/G	CLP ARO (21)	6115 (Ice Only) (1)	R34265-URH-SED-1	S: 12/12/2013	14:40		1312013-01
C04R1	Sediment/ Phillip Anderson	L/G	CLP ARO (21)	6117 (Ice Only) (1)	R34265-URH-SED-11	S: 12/12/2013	11:20		1312013-02
C04R2	Sediment/ Phillip Anderson	L/G	CLP ARO (21)	6118 (Ice Only) (1)	R34265-URH-SED-12	S: 12/12/2013	10:55		1312013-03
C04R3	Sediment/ Phillip Anderson	L/G	CLP ARO (21)	6119 (Ice Only) (1)	R34265-URH-SED-13	S: 12/12/2013	10:35		1312013-04
C04R4	Sediment/ Phillip Anderson	L/G	CLP ARO (21)	6120 (Ice Only) (1)	R34265-URH-SED-14	S: 12/12/2013	14:25		1312013-05
C04R5	Sediment/ Phillip Anderson	L/G	CLP ARO (21)	6121 (Ice Only) (1)	R34265-URH-SED-15	S: 12/12/2013	13:30		1312013-06
C04R6	Sediment/ Phillip Anderson	L/G	CLP ARO (21)	6122 (Ice Only); 6123 (Ice Only); 6124 (Ice Only) (3)	R34265-URH-SED-10	S: 12/12/2013	11:40		1312013-07
C04R7	Sediment/ Phillip Anderson	L/G	CLP ARO (21)	6125 (Ice Only) (1)	R34265-URH-SED-2	S: 12/12/2013	14:20		1312013-08
C04R8	Sediment/ Phillip Anderson	L/G	CLP ARO (21)	6126 (Ice Only) (1)	R34265-URH-SED-3	S: 12/12/2013	13:50		1312013-09
C04R9	Sediment/ Phillip Anderson	L/G	CLP ARO (21)	6127 (Ice Only) (1)	R34265-URH-SED-4	S: 12/12/2013	13:40		1312013-10

Shipment for Case Complete?	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt:	Chain of Custody Seal Number:	
	C04R6		12/13/13 5°C		
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G		Custody Seal Intact? __	Shipment Iced? __
CLP ARO = CLP TCL PCB (Aroclors)					

TR Number: 3-092922069-121213-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, 15000 Conference Center Dr., Chantilly, VA 20151-3819 Phone 703/818-4200, Fax 703/818-4602

LABORATORY COPY

FZV51.047 Page 1 of 2

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: United Rigging & Hauling

Project #: DAS R34265

USEPA Contract Laboratory Program
Organic Traffic Report & Chain of Custody Record

~~Case No:~~ ~~DD~~
DAS No: R34265
SDG No:
L

Date Shipped:	12/12/2013
Carrier Name:	FedEx
Airbill:	8006 1800 4908
Shipped to:	ASQAB US EPA Region III 701 Mapes Road Fort Meade MD 20755 (410) 305-2667

Chain of Custody Record

	Relinquished By	(Date / Time)	Received By	(Date / Time)
1	[signature]	12/12/13 16:15	[signature]	12/13/13 0:22
2				
3				
4				

Sampler Signature: [signature]

For Lab Use Only

Lab Contract No:
Unit Price:
Transfer To:
Lab Contract No:
Unit Price:

ORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		INORGANIC SAMPLE No.	FOR LAB USE ONLY Sample Condition On Receipt
C04S0	Sediment/ Phillip Anderson	L/G	CLP ARO (21)	6128 (Ice Only) (1)	R34265-URH-SED-5	S: 12/12/2013	13:25		1312013-11
C04S1	Sediment/ Phillip Anderson	L/G	CLP ARO (21)	6129 (Ice Only) (1)	R34265-URH-SED-6	S: 12/12/2013	13:00		1312013-12
C04S2	Sediment/ Phillip Anderson	L/G	CLP ARO (21)	6130 (Ice Only) (1)	R34265-URH-SED-7	S: 12/12/2013	12:20		1312013-13
C04S3	Sediment/ Phillip Anderson	L/G	CLP ARO (21)	6131 (Ice Only) (1)	R34265-URH-SED-8	S: 12/12/2013	12:35		1312013-14

Shipment for Case Complete?Y	Sample(s) to be used for laboratory QC:	Additional Sampler Signature(s):	Cooler Temperature Upon Receipt:	Chain of Custody Seal Number:
	C04RS		12/13/13 5°C	
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Custody Seal Intact? __	Shipment Iced? __
CLP ARO = CLP TCL PCB (Aroclors)				

TR Number: 3-092922069-121213-0001

LABORATORY COPY

PR provides preliminary results. Requests for preliminary results will increase analytical costs.
Send Copy to: Sample Management Office, 15000 Conference Center Dr., Chantilly, VA. 20151-3819 Phone 703/818-4200; Fax 703/818-4602

F2V5.1-047 Page 2 of 2

ORIGINAL

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: United Rigging & Hauling
Station ID: R34265-URH-SED-1
Sample Matrix: Sediment
Project #: DAS R34265
Lab ID: 1312013-01
Date Collected: 12/12/2013

Physical Parameters
Targets

Analyte	Result % by Weight	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
% Solids	**81.8**			1	12/23/13	12/24/13 10:45	USGS I-5753-85

Organochlorine Pesticides and PCBs
Targets

Analyte	Result mg/kg dry	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
Aroclor-1016	U		0.0382	1	12/17/13	12/20/13 19:13	R3QA207
Aroclor-1221	U		0.0382	1	12/17/13	12/20/13 19:13	R3QA207
Aroclor-1232	U		0.0382	1	12/17/13	12/20/13 19:13	R3QA207
Aroclor-1242	U		0.0382	1	12/17/13	12/20/13 19:13	R3QA207
Aroclor-1248	U		0.0382	1	12/17/13	12/20/13 19:13	R3QA207
Aroclor-1254	U		0.0382	1	12/17/13	12/20/13 19:13	R3QA207
Aroclor-1260	U		0.0382	1	12/17/13	12/20/13 19:13	R3QA207
Aroclor-1262	U		0.0382	1	12/17/13	12/20/13 19:13	R3QA207
Aroclor-1268	U		0.0382	1	12/17/13	12/20/13 19:13	R3QA207

Surrogates

Analyte	Result mg/kg dry	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
Surrogate: Tetrachloro-meta-xylene	0.0186		**49 %**	*30-150*	12/17/13	12/20/13 19:13	*R3QA207*
Surrogate: Decachlorobiphenyl	0.0271		**71 %**	*30-150*	12/17/13	12/20/13 19:13	*R3QA207*

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: United Rigging & Hauling
Station ID: R34265-URH-SED-11
Sample Matrix: Sediment

Project #: DAS R34265
Lab ID: 1312013-02
Date Collected: 12/12/2013

Physical Parameters

Targets

Analyte	Result % by Weight	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
% Solids	**50.2**			1	12/23/13	12/24/13 10:45	USGS I-5753-85

Organochlorine Pesticides and PCBs

Targets

Analyte	Result mg/kg dry	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
Aroclor-1016	U		0.0664	1	12/17/13	12/20/13 19:32	R3QA207
Aroclor-1221	U		0.0664	1	12/17/13	12/20/13 19:32	R3QA207
Aroclor-1232	U		0.0664	1	12/17/13	12/20/13 19:32	R3QA207
Aroclor-1242	U		0.0664	1	12/17/13	12/20/13 19:32	R3QA207
Aroclor-1248	U		0.0664	1	12/17/13	12/20/13 19:32	R3QA207
Aroclor-1254	U		0.0664	1	12/17/13	12/20/13 19:32	R3QA207
Aroclor-1260	U		0.0664	1	12/17/13	12/20/13 19:32	R3QA207
Aroclor-1262	U		0.0664	1	12/17/13	12/20/13 19:32	R3QA207
Aroclor-1268	U		0.0664	1	12/17/13	12/20/13 19:32	R3QA207

Surrogates

Analyte	Result mg/kg dry	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
Surrogate: Tetrachloro-meta-xylene	0.0592		**89 %**	*30-150*	12/17/13	12/20/13 19:32	*R3QA207*
Surrogate: Decachlorobiphenyl	0.0607		**91 %**	*30-150*	12/17/13	12/20/13 19:32	*R3QA207*

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: United Rigging & Hauling
Station ID: R34265-URH-SED-12
Sample Matrix: Sediment
Project #: DAS R34265
Lab ID: 1312013-03
Date Collected: 12/12/2013

Physical Parameters
Targets

Analyte	Result % by Weight	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
% Solids	**67.8**			1	12/23/13	12/24/13 10:45	USGS I-5753-85

Organochlorine Pesticides and PCBs
Targets

Analyte	Result mg/kg dry	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
Aroclor-1016	U		0.0473	1	12/17/13	12/20/13 19:50	R3QA207
Aroclor-1221	U		0.0473	1	12/17/13	12/20/13 19:50	R3QA207
Aroclor-1232	U		0.0473	1	12/17/13	12/20/13 19:50	R3QA207
Aroclor-1242	U		0.0473	1	12/17/13	12/20/13 19:50	R3QA207
Aroclor-1248	U		0.0473	1	12/17/13	12/20/13 19:50	R3QA207
Aroclor-1254	U		0.0473	1	12/17/13	12/20/13 19:50	R3QA207
Aroclor-1260	U		0.0473	1	12/17/13	12/20/13 19:50	R3QA207
Aroclor-1262	U		0.0473	1	12/17/13	12/20/13 19:50	R3QA207
Aroclor-1268	U		0.0473	1	12/17/13	12/20/13 19:50	R3QA207

Surrogates

Analyte	Result mg/kg dry	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
Surrogate: Tetrachloro-meta-xylene	0.0391		**83 %**	*30-150*	12/17/13	12/20/13 19:50	*R3QA207*
Surrogate: Decachlorobiphenyl	0.0415		**88 %**	*30-150*	12/17/13	12/20/13 19:50	*R3QA207*

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: United Rigging & Hauling
Station ID: R34265-URH-SED-13
Sample Matrix: Sediment

Project #: DAS R34265
Lab ID: 1312013-04
Date Collected: 12/12/2013

Physical Parameters

Targets

Analyte	Result % by Weight	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
% Solids	**79.6**			1	12/23/13	12/24/13 10:45	USGS I-5753-85

Organochlorine Pesticides and PCBs

Targets

Analyte	Result mg/kg dry	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
Aroclor-1016	U		0.0388	1	12/17/13	12/20/13 20:09	R3QA207
Aroclor-1221	U		0.0388	1	12/17/13	12/20/13 20:09	R3QA207
Aroclor-1232	U		0.0388	1	12/17/13	12/20/13 20:09	R3QA207
Aroclor-1242	U		0.0388	1	12/17/13	12/20/13 20:09	R3QA207
Aroclor-1248	U		0.0388	1	12/17/13	12/20/13 20:09	R3QA207
Aroclor-1254	U		0.0388	1	12/17/13	12/20/13 20:09	R3QA207
Aroclor-1260	U		0.0388	1	12/17/13	12/20/13 20:09	R3QA207
Aroclor-1262	U		0.0388	1	12/17/13	12/20/13 20:09	R3QA207
Aroclor-1268	U		0.0388	1	12/17/13	12/20/13 20:09	R3QA207

Surrogates

Analyte	Result mg/kg dry	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
Surrogate: Tetrachloro-meta-xylene	0.0334		**86 %**	*30-150*	12/17/13	12/20/13 20:09	*R3QA207*
Surrogate: Decachlorobiphenyl	0.0356		**92 %**	*30-150*	12/17/13	12/20/13 20:09	*R3QA207*

ORIGINAL

Site Name: United Rigging & Hauling
Station ID: R35265-URH-SED-14
Sample Matrix: Sediment

Project #: DAS R34265
Lab ID: 1312013-05
Date Collected: 12/12/2013

Physical Parameters
Targets

Analyte	Result % by Weight	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
% Solids	**78.1**			1	12/23/13	12/24/13 10:45	USGS I-5753-85

Organochlorine Pesticides and PCBs
Targets

Analyte	Result mg/kg dry	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
Aroclor-1016	U		0.0378	1	12/17/13	12/20/13 20:27	R3QA207
Aroclor-1221	U		0.0378	1	12/17/13	12/20/13 20:27	R3QA207
Aroclor-1232	U		0.0378	1	12/17/13	12/20/13 20:27	R3QA207
Aroclor-1242	U		0.0378	1	12/17/13	12/20/13 20:27	R3QA207
Aroclor-1248	U		0.0378	1	12/17/13	12/20/13 20:27	R3QA207
Aroclor-1254	U		0.0378	1	12/17/13	12/20/13 20:27	R3QA207
Aroclor-1260	U		0.0378	1	12/17/13	12/20/13 20:27	R3QA207
Aroclor-1262	U		0.0378	1	12/17/13	12/20/13 20:27	R3QA207
Aroclor-1268	U		0.0378	1	12/17/13	12/20/13 20:27	R3QA207

Surrogates

Analyte	Result mg/kg dry	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
Surrogate: Tetrachloro-meta-xylene	0.0316		**84 %**	*30-150*	12/17/13	12/20/13 20:27	*R3QA207*
Surrogate: Decachlorobiphenyl	0.0331		**88 %**	*30-150*	12/17/13	12/20/13 20:27	*R3QA207*

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Region 3 Environmental Science Center
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701 Mapes Road
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Site Name: United Rigging & Hauling
Station ID: R34265-URH-SED-15
Sample Matrix: Sediment

Project #: DAS R34265
Lab ID: 1312013-06
Date Collected: 12/12/2013

Physical Parameters

Targets

Analyte	Result % by Weight	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
% Solids	**64.7**			1	12/23/13	12/24/13 10:45	USGS I-5753-85

Organochlorine Pesticides and PCBs

Targets

Analyte	Result mg/kg dry	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
Aroclor-1016	U		0.0502	1	12/17/13	12/20/13 20:46	R3QA207
Aroclor-1221	U		0.0502	1	12/17/13	12/20/13 20:46	R3QA207
Aroclor-1232	U		0.0502	1	12/17/13	12/20/13 20:46	R3QA207
Aroclor-1242	U		0.0502	1	12/17/13	12/20/13 20:46	R3QA207
Aroclor-1248	U		0.0502	1	12/17/13	12/20/13 20:46	R3QA207
Aroclor-1254	U		0.0502	1	12/17/13	12/20/13 20:46	R3QA207
Aroclor-1260	**0.0934**		0.0502	1	12/17/13	12/20/13 20:46	R3QA207
Aroclor-1262	U		0.0502	1	12/17/13	12/20/13 20:46	R3QA207
Aroclor-1268	U		0.0502	1	12/17/13	12/20/13 20:46	R3QA207

Surrogates

Analyte	Result mg/kg dry	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
Surrogate: Tetrachloro-meta-xylene	0.0378		**75 %**	*30-150*	12/17/13	12/20/13 20:46	*R3QA207*
Surrogate: Decachlorobiphenyl	0.0392		**78 %**	*30-150*	12/17/13	12/20/13 20:46	*R3QA207*

ORIGINAL

Site Name: United Rigging & Hauling
Station ID: R34265-URH-SED-10
Sample Matrix: Sediment
Project #: DAS R34265
Lab ID: 1312013-07
Date Collected: 12/12/2013

Physical Parameters
Targets

Analyte	Result % by Weight	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
% Solids	**80.9**			1	12/23/13	12/24/13 10:45	USGS I-5753-85

Organochlorine Pesticides and PCBs
Targets

Analyte	Result mg/kg dry	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
Aroclor-1016	U		0.0384	1	12/17/13	12/20/13 21:05	R3QA207
Aroclor-1221	U		0.0384	1	12/17/13	12/20/13 21:05	R3QA207
Aroclor-1232	U		0.0384	1	12/17/13	12/20/13 21:05	R3QA207
Aroclor-1242	U		0.0384	1	12/17/13	12/20/13 21:05	R3QA207
Aroclor-1248	U		0.0384	1	12/17/13	12/20/13 21:05	R3QA207
Aroclor-1254	U		0.0384	1	12/17/13	12/20/13 21:05	R3QA207
Aroclor-1260	U		0.0384	1	12/17/13	12/20/13 21:05	R3QA207
Aroclor-1262	U		0.0384	1	12/17/13	12/20/13 21:05	R3QA207
Aroclor-1268	U		0.0384	1	12/17/13	12/20/13 21:05	R3QA207

Surrogates

Analyte	Result mg/kg dry	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
Surrogate: Tetrachloro-meta-xylene	0.0312		**81 %**	*30-150*	12/17/13	12/20/13 21:05	*R3QA207*
Surrogate: Decachlorobiphenyl	0.0327		**85 %**	*30-150*	12/17/13	12/20/13 21:05	*R3QA207*

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Fort Meade, Maryland 20755-5350

Site Name: United Rigging & Hauling
Station ID: R34265-URH-SED-2
Sample Matrix: Sediment

Project #: DAS R34265
Lab ID: 1312013-08
Date Collected: 12/12/2013

Physical Parameters

Targets

Analyte	Result % by Weight	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
% Solids	**78.0**			1	12/23/13	12/24/13 10:45	USGS I-5753-85

Organochlorine Pesticides and PCBs

Targets

Analyte	Result mg/kg dry	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
Aroclor-1016	U		0.0426	1	12/17/13	12/20/13 22:00	R3QA207
Aroclor-1221	U		0.0426	1	12/17/13	12/20/13 22:00	R3QA207
Aroclor-1232	U		0.0426	1	12/17/13	12/20/13 22:00	R3QA207
Aroclor-1242	U		0.0426	1	12/17/13	12/20/13 22:00	R3QA207
Aroclor-1248	U		0.0426	1	12/17/13	12/20/13 22:00	R3QA207
Aroclor-1254	U		0.0426	1	12/17/13	12/20/13 22:00	R3QA207
Aroclor-1260	U		0.0426	1	12/17/13	12/20/13 22:00	R3QA207
Aroclor-1262	U		0.0426	1	12/17/13	12/20/13 22:00	R3QA207
Aroclor-1268	U		0.0426	1	12/17/13	12/20/13 22:00	R3QA207

Surrogates

Analyte	Result mg/kg dry	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
Surrogate: Tetrachloro-meta-xylene	0.0351		**82 %**	*30-150*	12/17/13	12/20/13 22:00	*R3QA207*
Surrogate: Decachlorobiphenyl	0.0361		**85 %**	*30-150*	12/17/13	12/20/13 22:00	*R3QA207*

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Site Name: United Rigging & Hauling
Station ID: R34265-URH-SED-3
Sample Matrix: Sediment
Project #: DAS R34265
Lab ID: 1312013-09
Date Collected: 12/12/2013

Physical Parameters

Targets

Analyte	Result % by Weight	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
% Solids	**77.4**			1	12/23/13	12/24/13 10:45	USGS I-5753-85

Organochlorine Pesticides and PCBs

Targets

Analyte	Result mg/kg dry	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
Aroclor-1016	U		0.0411	1	12/17/13	12/20/13 22:19	R3QA207
Aroclor-1221	U		0.0411	1	12/17/13	12/20/13 22:19	R3QA207
Aroclor-1232	U		0.0411	1	12/17/13	12/20/13 22:19	R3QA207
Aroclor-1242	U		0.0411	1	12/17/13	12/20/13 22:19	R3QA207
Aroclor-1248	U		0.0411	1	12/17/13	12/20/13 22:19	R3QA207
Aroclor-1254	U		0.0411	1	12/17/13	12/20/13 22:19	R3QA207
Aroclor-1260	U		0.0411	1	12/17/13	12/20/13 22:19	R3QA207
Aroclor-1262	U		0.0411	1	12/17/13	12/20/13 22:19	R3QA207
Aroclor-1268	U		0.0411	1	12/17/13	12/20/13 22:19	R3QA207

Surrogates

Analyte	Result mg/kg dry	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
Surrogate: Tetrachloro-meta-xylene	0.0332		**81 %**	*30-150*	12/17/13	12/20/13 22:19	*R3QA207*
Surrogate: Decachlorobiphenyl	0.0345		**84 %**	*30-150*	12/17/13	12/20/13 22:19	*R3QA207*

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Site Name: United Rigging & Hauling
Station ID: R34265-URH-SED-4
Sample Matrix: Sediment

Project #: DAS R34265
Lab ID: 1312013-10
Date Collected: 12/12/2013

Physical Parameters

Targets

Analyte	Result % by Weight	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
% Solids	**80.9**			1	12/23/13	12/24/13 10:45	USGS I-5753-85

Organochlorine Pesticides and PCBs

Targets

Analyte	Result mg/kg dry	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
Aroclor-1016	U		0.0382	1	12/17/13	12/20/13 22:37	R3QA207
Aroclor-1221	U		0.0382	1	12/17/13	12/20/13 22:37	R3QA207
Aroclor-1232	U		0.0382	1	12/17/13	12/20/13 22:37	R3QA207
Aroclor-1242	U		0.0382	1	12/17/13	12/20/13 22:37	R3QA207
Aroclor-1248	U		0.0382	1	12/17/13	12/20/13 22:37	R3QA207
Aroclor-1254	U		0.0382	1	12/17/13	12/20/13 22:37	R3QA207
Aroclor-1260	U		0.0382	1	12/17/13	12/20/13 22:37	R3QA207
Aroclor-1262	U		0.0382	1	12/17/13	12/20/13 22:37	R3QA207
Aroclor-1268	U		0.0382	1	12/17/13	12/20/13 22:37	R3QA207

Surrogates

Analyte	Result mg/kg dry	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
Surrogate: Tetrachloro-meta-xylene	0.0313		**82 %**	*30-150*	12/17/13	12/20/13 22:37	*R3QA207*
Surrogate: Decachlorobiphenyl	0.0320		**84 %**	*30-150*	12/17/13	12/20/13 22:37	*R3QA207*

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ORIGINAL

Site Name: United Rigging & Hauling
Station ID: R34265-URH-SED-5
Sample Matrix: Sediment
Project #: DAS R34265
Lab ID: 1312013-11
Date Collected: 12/12/2013

Physical Parameters

Targets

Analyte	Result % by Weight	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
% Solids	**64.8**			1	12/23/13	12/24/13 10:45	USGS I-5753-85

Organochlorine Pesticides and PCBs

Targets

Analyte	Result mg/kg dry	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
Aroclor-1016	U		0.0493	1	12/17/13	12/20/13 22:56	R3QA207
Aroclor-1221	U		0.0493	1	12/17/13	12/20/13 22:56	R3QA207
Aroclor-1232	U		0.0493	1	12/17/13	12/20/13 22:56	R3QA207
Aroclor-1242	U		0.0493	1	12/17/13	12/20/13 22:56	R3QA207
Aroclor-1248	U		0.0493	1	12/17/13	12/20/13 22:56	R3QA207
Aroclor-1254	U		0.0493	1	12/17/13	12/20/13 22:56	R3QA207
Aroclor-1260	**0.0944**		0.0493	1	12/17/13	12/20/13 22:56	R3QA207
Aroclor-1262	U		0.0493	1	12/17/13	12/20/13 22:56	R3QA207
Aroclor-1268	U		0.0493	1	12/17/13	12/20/13 22:56	R3QA207

Surrogates

Analyte	Result mg/kg dry	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
Surrogate: Tetrachloro-meta-xylene	0.0387		**78 %**	*30-150*	12/17/13	12/20/13 22:56	*R3QA207*
Surrogate: Decachlorobiphenyl	0.0398		**81 %**	*30-150*	12/17/13	12/20/13 22:56	*R3QA207*

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Site Name: United Rigging & Hauling
Station ID: R34265-URH-SED-6
Sample Matrix: Sediment

Project #: DAS R34265
Lab ID: 1312013-12
Date Collected: 12/12/2013

Physical Parameters

Targets

Analyte	Result % by Weight	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
% Solids	**77.7**			1	12/23/13	12/24/13 10:45	USGS I-5753-85

Organochlorine Pesticides and PCBs

Targets

Analyte	Result mg/kg dry	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
Aroclor-1016	U		0.0381	1	12/17/13	12/20/13 23:14	R3QA207
Aroclor-1221	U		0.0381	1	12/17/13	12/20/13 23:14	R3QA207
Aroclor-1232	U		0.0381	1	12/17/13	12/20/13 23:14	R3QA207
Aroclor-1242	U		0.0381	1	12/17/13	12/20/13 23:14	R3QA207
Aroclor-1248	U		0.0381	1	12/17/13	12/20/13 23:14	R3QA207
Aroclor-1254	U		0.0381	1	12/17/13	12/20/13 23:14	R3QA207
Aroclor-1260	U		0.0381	1	12/17/13	12/20/13 23:14	R3QA207
Aroclor-1262	U		0.0381	1	12/17/13	12/20/13 23:14	R3QA207
Aroclor-1268	U		0.0381	1	12/17/13	12/20/13 23:14	R3QA207

Surrogates

Analyte	Result mg/kg dry	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
Surrogate: Tetrachloro-meta-xylene	0.0294		**77 %**	*30-150*	12/17/13	12/20/13 23:14	*R3QA207*
Surrogate: Decachlorobiphenyl	0.0302		**79 %**	*30-150*	12/17/13	12/20/13 23:14	*R3QA207*

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Site Name: United Rigging & Hauling
Station ID: R34265-URH-SED-7
Sample Matrix: Sediment
Project #: DAS R34265
Lab ID: 1312013-13
Date Collected: 12/12/2013

Physical Parameters

Targets

Analyte	Result % by Weight	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
% Solids	**77.3**			1	12/23/13	12/24/13 10:45	USGS I-5753-85

Organochlorine Pesticides and PCBs

Targets

Analyte	Result mg/kg dry	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
Aroclor-1016	U		0.0406	1	12/17/13	12/20/13 23:33	R3QA207
Aroclor-1221	U		0.0406	1	12/17/13	12/20/13 23:33	R3QA207
Aroclor-1232	U		0.0406	1	12/17/13	12/20/13 23:33	R3QA207
Aroclor-1242	U		0.0406	1	12/17/13	12/20/13 23:33	R3QA207
Aroclor-1248	U		0.0406	1	12/17/13	12/20/13 23:33	R3QA207
Aroclor-1254	U		0.0406	1	12/17/13	12/20/13 23:33	R3QA207
Aroclor-1260	U		0.0406	1	12/17/13	12/20/13 23:33	R3QA207
Aroclor-1262	U		0.0406	1	12/17/13	12/20/13 23:33	R3QA207
Aroclor-1268	U		0.0406	1	12/17/13	12/20/13 23:33	R3QA207

Surrogates

Analyte	Result mg/kg dry	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
Surrogate: Tetrachloro-meta-xylene	0.0320		**79 %**	*30-150*	12/17/13	12/20/13 23:33	*R3QA207*
Surrogate: Decachlorobiphenyl	0.0330		**81 %**	*30-150*	12/17/13	12/20/13 23:33	*R3QA207*

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Site Name: United Rigging & Hauling
Station ID: R34265-URH-SED-8
Sample Matrix: Sediment

Project #: DAS R34265
Lab ID: 1312013-14
Date Collected: 12/12/2013

Physical Parameters

Targets

Analyte	Result % by Weight	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
% Solids	**86.9**			1	12/23/13	12/24/13 10:45	USGS I-5753-85

Organochlorine Pesticides and PCBs

Targets

Analyte	Result mg/kg dry	Flags Qualifiers	Quantitation Limit	Dilution	Prepared	Analyzed	Method/SOP#
Aroclor-1016	U		0.0350	1	12/17/13	12/20/13 23:52	R3QA207
Aroclor-1221	U		0.0350	1	12/17/13	12/20/13 23:52	R3QA207
Aroclor-1232	U		0.0350	1	12/17/13	12/20/13 23:52	R3QA207
Aroclor-1242	U		0.0350	1	12/17/13	12/20/13 23:52	R3QA207
Aroclor-1248	U		0.0350	1	12/17/13	12/20/13 23:52	R3QA207
Aroclor-1254	U		0.0350	1	12/17/13	12/20/13 23:52	R3QA207
Aroclor-1260	U		0.0350	1	12/17/13	12/20/13 23:52	R3QA207
Aroclor-1262	U		0.0350	1	12/17/13	12/20/13 23:52	R3QA207
Aroclor-1268	U		0.0350	1	12/17/13	12/20/13 23:52	R3QA207

Surrogates

Analyte	Result mg/kg dry	Flags Qualifiers	%Recovery	%Recovery Limits	Prepared	Analyzed	Method/SOP#
Surrogate: Tetrachloro-meta-xylene	0.0284		**81 %**	*30-150*	12/17/13	12/20/13 23:52	*R3QA207*
Surrogate: Decachlorobiphenyl	0.0294		**84 %**	*30-150*	12/17/13	12/20/13 23:52	*R3QA207*

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Fort Meade, Maryland 20755-5350

ORIGINAL

Site Name: United Rigging & Hauling **Project #: DAS R34265**

QC Data
Physical Parameters

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BL31703 - PD60/PD105										
Duplicate (BL31703-DUP1)		**Source: 1312013-01**		Prepared: 12/23/13 01:30		Analyzed: 12/24/13 10:45				
% Solids	80.7		% by Weight		81.8			1	20	
Duplicate (BL31703-DUP2)		**Source: 1312013-03**		Prepared: 12/23/13 01:30		Analyzed: 12/24/13 10:45				
% Solids	67.4		% by Weight		67.8			0.6	20	

Site Name: United Rigging & Hauling **Project #:** DAS R34265

QC Data
Organochlorine Pesticides and PCBs

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BL31608 - EPA 3545A PCB/Pest										
Blank (BL31608-BLK1)				Prepared: 12/17/13 09:00		Analyzed: 12/20/13 16:26				
Aroclor-1016	U	0.0333	mg/kg wet							
Aroclor-1221	U	0.0333	"							
Aroclor-1232	U	0.0333	"							
Aroclor-1242	U	0.0333	"							
Aroclor-1248	U	0.0333	"							
Aroclor-1254	U	0.0333	"							
Aroclor-1260	U	0.0333	"							
Aroclor-1262	U	0.0333	"							
Aroclor-1268	U	0.0333	"							
Surrogate: Tetrachloro-meta-xylene	*0.0301*		"	*0.033333*		*90*	*30-150*			
Surrogate: Decachlorobiphenyl	*0.0331*		"	*0.033333*		*99*	*30-150*			
LCS (BL31608-BS1)				Prepared: 12/17/13 09:00		Analyzed: 12/20/13 17:22				
Aroclor-1016	0.335	0.0333	mg/kg wet	0.33333		100	70-130			
Aroclor-1221	U	0.0333	"				70-130			
Aroclor-1232	U	0.0333	"				70-130			
Aroclor-1242	U	0.0333	"				70-130			
Aroclor-1248	U	0.0333	"				70-130			
Aroclor-1254	U	0.0333	"				70-130			
Aroclor-1260	0.350	0.0333	"	0.33333		105	70-130			
Aroclor-1262	U	0.0333	"				70-130			
Aroclor-1268	U	0.0333	"				70-130			
Surrogate: Tetrachloro-meta-xylene	*0.0315*		"	*0.033333*		*95*	*30-150*			
Surrogate: Decachlorobiphenyl	*0.0341*		"	*0.033333*		*102*	*30-150*			
Matrix Spike (BL31608-MS1)		**Source: 1312013-07**		Prepared: 12/17/13 09:00		Analyzed: 12/20/13 21:23				
Aroclor-1016	0.310	0.0384	mg/kg dry	0.38388	U	81	50-150			
Aroclor-1221	U	0.0384	"		0.00		50-150			
Aroclor-1232	U	0.0384	"		0.00		50-150			
Aroclor-1242	U	0.0384	"		0.00		50-150			
Aroclor-1248	U	0.0384	"		0.00		50-150			
Aroclor-1254	U	0.0384	"		0.00		50-150			
Aroclor-1260	0.328	0.0384	"	0.38388	U	85	50-150			
Aroclor-1262	U	0.0384	"		0.00		50-150			
Aroclor-1268	U	0.0384	"		0.00		50-150			
Surrogate: Tetrachloro-meta-xylene	*0.0307*		"	*0.038388*		*80*	*30-150*			
Surrogate: Decachlorobiphenyl	*0.0320*		"	*0.038388*		*83*	*30-150*			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 3 Environmental Science Center
Office of Analytical Services and Quality Assurance
701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: United Rigging & Hauling **Project #: DAS R34265**

QC Data
Organochlorine Pesticides and PCBs

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BL31608 - EPA 3545A PCB/Pest										
Matrix Spike Dup (BL31608-MSD1)		**Source: 1312013-07**		Prepared: 12/17/13 09:00		Analyzed: 12/20/13 21:42				
Aroclor-1016	0.311	0.0384	mg/kg dry	0.38388	U	81	50-150	0.5	25	
Aroclor-1221	U	0.0384	"		0.00		50-150		25	
Aroclor-1232	U	0.0384	"		0.00		50-150		25	
Aroclor-1242	U	0.0384	"		0.00		50-150		25	
Aroclor-1248	U	0.0384	"		0.00		50-150		25	
Aroclor-1254	U	0.0384	"		0.00		50-150		25	
Aroclor-1260	0.335	0.0384	"	0.38388	U	87	50-150	2	25	
Aroclor-1262	U	0.0384	"		0.00		50-150		25	
Aroclor-1268	U	0.0384	"		0.00		50-150		25	
Surrogate: Tetrachloro-meta-xylene	*0.0318*		"	*0.038388*		*83*	*30-150*			
Surrogate: Decachlorobiphenyl	*0.0327*		"	*0.038388*		*85*	*30-150*			

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Site Name: United Rigging & Hauling **Project #: DAS R34265**

Notes and Definitions

%REC	Percent Recovery
RPD	Relative Percent Difference
U	Analyte included in the analysis, but not detected at or above the quantitation limit.
NR	Not Reported

QUANTITATION LIMIT: The lowest concentration of an analyte that can be reliably measured within specified limits of precision and accuracy for a specific laboratory analytical method and that takes into account analytical adjustments made during sample preparation and analysis.

SOLID SAMPLE RESULTS - REPORTING PROTOCOL: Solid samples where % Solids (percent dry wt at 105 degrees C) has been performed, are analyzed wet and converted to a dry weight result for reporting purposes. This is routine for organics and most inorganic analyses. When metals and mercury analyses are requested, solid samples are routinely analyzed and reported on a dry weight basis. Solid samples for metals/mercury are prepared for analysis by an initial drying at 60 degree C and homogenization before digestion. Oil-type samples will be analyzed and reported on a wet weight basis for all analyses because of the nature of the sample. Any exceptions to the protocol will be noted with a qualifier

ON-DEMAND: The term 'on-demand' analysis, if noted in the report narrative, refers to Section 13.1.4 in the Region III OASQA Laboratory Quality Manual, which provides procedures for non-routine analyses or analytes.

APPENDIX B: MDE TOXICOLOGICAL EVALUATION

United Rigging and Hauling MD-248
Beltsville, Prince George's County, Maryland
Toxicological Evaluation

Summary

This toxicological evaluation examines the human health risks associated with the sediment in streams and wetlands downstream of the United Rigging and Hauling MD-248 site in Beltsville, Prince George's County, Maryland. The sediment in the streams of interest was evaluated for child recreational visitor (1-6 years), youth recreational visitor (6-17), adult recreational visitor and construction worker populations under a recreational future use scenario. This toxicological evaluation evaluates risks to recreational use populations only. Commercial use scenarios are expected to have potentially greater levels of risk and should be evaluated to reflect appropriate land use scenarios. The United States Environmental Protection Agency (EPA) has recommended default exposure parameters that were used to estimate cumulative risk from all chemicals (4, 5, 6, 7 and 8). EPA recognizes as an acceptable Hazard Index (HI) values less than or equal to 1 (noncarcinogenic chemicals) and excess lifetime cancer risk (CR) less than or equal to 10^{-6} to 10^{-4}. The Maryland Department of the Environment (MDE) recognizes as an acceptable HI values less than or equal to 1 and excess lifetime cancer risk less than or equal to 10^{-6} to 10^{-5}. Risks to nearby surface water ecological receptors were evaluated by comparing sediment concentrations to ecological screening benchmarks. Based on these exposures, estimated risks at the site were compared to MDE and EPA recommended levels, and the following conclusions were reached:

Summary table of Hazard Indices (HI) values and Cancer Risk (CR) values for each recreational population

Noncarcinogenic Endpoints Detected Contaminants Only			
Population	**Pathway**	**Hazard Index**	**Risk Drivers**
Child recreational visitor	N/A	N/A	N/A
Youth recreational visitor	N/A	N/A	N/A
Adult recreational visitor	N/A	N/A	N/A
Construction worker	N/A	N/A	N/A
Carcinogenic Endpoints Detected Contaminants Only			
Population	**Pathway**	**Cancer Risk**	**Risk Drivers**
Child recreational visitor	N/A	N/A	N/A
Youth recreational visitor	N/A	N/A	N/A
Adult recreational visitor	N/A	N/A	N/A
Construction worker	N/A	N/A	N/A

NA = Not applicable; no noncarcinogenic or carcinogenic exposure pathway exceeded a noncancer Hazard Index of 1 or a cancer risk of 1 x 10^{-5} for detected contaminants on site.

the known PCB contamination in the Anacostia River watershed (which includes Indian Creek). The data collected for the ESI is currently being used for a Toxicological Evaluation.

1.0 Method

In evaluating risk to human health, maximum concentrations of all chemicals detected in sediment were compared to medium-specific screening levels for soil (EPA Regional Screening Level Table values and Maryland Department of the Environment Cleanup Standards (1, 2)). Chemicals that exceeded human health Regional Screening Level (RSL) values were then evaluated quantitatively. Relevant toxicological data and RSL values from surrogate compounds (structurally similar analogues) were used for some of the chemicals with no corresponding RSL value. The evaluation of sediment was performed using sediment samples collected from locations downstream of the property.

1.1 Human Health

Maximum concentrations of all chemicals detected in sediment (dry weight values) were compared to the EPA Regional Screening Level (RSL) table values for residential soil (1). Comparison of dry weight analytical values to the RSLs is recognized as a conservative measure but provides consistency in risk assessments across sites (with variable soil moisture content) and sampling time. Prior to comparison with each chemical concentration, noncarcinogenic RSLs were multiplied by 0.1, in order to account for any additivity of systemic effects. Carcinogenic RSL values were not adjusted and represent a target risk level of 10^{-6}. Carcinogenic and noncarcinogenic risk levels for all contaminants that exceeded their respective RSL screening level were evaluated quantitatively. The quantitative evaluation was based on expected future use and development scenarios and includes populations typically expected to frequent the site based on this proposed future use. For those sediment contaminants identified as potential risk drivers 95% upper confidence limit (95% UCL) values were calculated. The 95% UCL concentrations were used to estimate the exposure point concentrations and quantify potential risks for the soil exposure pathways on site when applicable (3).

The future land use at the site was assumed to be recreational; therefore, the recreational exposure scenario was used to evaluate risk at the site. The contaminants identified at the site at concentrations that exceeded residential RSLs were further evaluated with regard to risk to relevant populations under the following scenarios (4, 5, 6, 7 and 8):

Recreational Development:

Sediment:

Adult Recreational Visitor: 30-year exposure duration, 70 kg body weight, 3280 cm^2 skin surface area (soil), 52 days per year exposure for soil ingestion, 50 mg soil ingested per day, 0.05 mg/cm^2-event soil to skin adherence factor, 70-year lifetime.

3.0 Conclusion

3.1 Sediment

All detected and nondetected sediment concentrations were below the residential soil RSL, therefore, quantitative evaluation human health sediment exposure pathways were not evaluated quantitatively for ingestion and dermal contact.

No detected sediment contaminant, exceeded its respective NOAA ERM value (Table 1). One sediment contaminant, Aroclor 1260, exceeded both the NOAA SQirT concentration and the EPA Region III BTAG freshwater sediment screening criteria.

3.2 MDE Cleanup Standards Screen

Maximum concentrations of all chemicals analyzed for in sediment were compared to their corresponding MDE residential cleanup standard (Attachment A). No detected sediment contaminant exceeded its residential soil cleanup standard. All contaminants that exceeded their respective soil residential cleanup standard were evaluated quantitatively.

3.3 Evaluation Assumptions

When determining whether an increased risk to human health exists at this site, it is important to understand that this evaluation was prepared as a first level screening evaluation. Many conservative assumptions are included in this evaluation, which were developed with the understanding that if the estimated risk, using the conservative assumptions, does not exceed EPA's recommended levels, then the risk estimated using more realistic scenarios will not exceed these levels.

Since this evaluation includes many conservative assumptions, a risk that exceeds EPA's recommended level of risk does not necessarily indicate an increased risk to human health. When this situation occurs, it is necessary to consider several points when determining if the risk actually does represent a threat to human health. For example, the quantitative risk estimate in this evaluation assumes people will be exposed to a contaminant at the maximum concentration all throughout the site and for the entire exposure duration. These assumptions do not take into account whether the maximum concentration is anomalous or characteristic of the site, or that biodegradation, dispersion, dilution, or other factors may decrease the contaminant concentration throughout the time of exposure.

4.0 References

1. EPA, Regional Screening Level Table, November, 2013.

2. Maryland Department of the Environment. *State of Maryland Department of the Environment Cleanup Standards for Soil and Groundwater.* Interim Final Guidance. June, 2009.

3. USEPA, Supplemental Guidance to the RAGS: Calculating the Concentration Term. May 1992. Publication 9285.7-081.

4. EPA. 1989. *Risk Assessment Guidance for Superfund Volume I Human Health Evaluation Manual (Part A) Interim Final.* Office of Emergency and Remedial Response. EPA/540/1-89/002.

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8. EPA. 1997. *Exposure Factors Handbook, Volume I, General Factors.* Office of Research and Development. EPA/600/P-95/002Fa.

9. EPA. Integrated Risk Information System. 2013.

10. EPA. 1992. *Dermal Exposure Assessment: Principles and Applications.* EPA/600/8-91/011B.

11. EPA. Region III, 1995. *Technical Guidance Manual, Risk Assessment, Assessing Dermal Exposure from Soil.* EPA/903-K-95-003.

12. Long, E.R., MacDonald, D.D., Smith, S.L., Calder, F.D., 1995. Incidence of Adverse Biological Effects Within Ranges of Chemical Concentrations in Marine and Estuarine Sediments. Environmental Management Vol 19, No. 1, pp. 81-97.

13. Buchman, M. F., 2008. NOAA Screening Quick Reference Tables, NOAA OR&R Report 08-1, Seattle WA, Office of Response and Restoration Division, National Oceanic and Atmospheric Administration, 34 pages.

TABLES

Table 1. Comparison of sediment contaminant concentrations to NOAA ERM values For United Rigging and Hauling, Ammendale Road, Beltsville, Prince George's County, Maryland.

Analyte	Qualifier	Concentration	ERM	Exceeds ERM (Yes/No)
Aroclor 1016	U	0.0332	0.18	No
Aroclor 1221	U	0.0332	0.18	No
Aroclor 1232	U	0.0332	0.18	No
Aroclor 1242	U	0.0332	0.18	No
Aroclor 1248	U	0.0332	0.18	No
Aroclor 1254	U	0.0332	0.18	No
Aroclor 1260		0.0944	0.18	No

< or U = compound was not detected, reported concentration represents one half the detection level.
Contaminant concentrations and ERM values are reported in units of mg/kg.

Table 2. Comparison of Sediment Contaminant Concentrations to NOAA SQuirTs Freshwater Sediment Screening Values, United Rigging and Hauling, Ammendale Road, Beltsville, Prince George's County, Maryland.

Analyte	Qualifier	Concentration (mg/kg)	TEC[1] (mg/kg)	Exceed (Yes/No)
Aroclor 1016	U	0.0332	0.0598	No
Aroclor 1221	U	0.0332	0.0598	No
Aroclor 1232	U	0.0332	0.0598	No
Aroclor 1242	U	0.0332	0.0598	No
Aroclor 1248	U	0.0332	0.0598	No
Aroclor 1254	U	0.0332	0.0598	No
Aroclor 1260		0.0944	0.0598	Yes

< or U = compound was not detected, reported concentration represents one half the detection level.
Contaminant concentrations and ERM values are reported in units of mg/kg.

[1]TEC = Threshold Effect Concentration (mg/kg).

Table 3. Comparison of Sediment Contaminant Concentrations to EPA Region III BTAG Freshwater Sediment Screening Benchmarks, United Rigging and Hauling, Ammendale Road, Beltsville, Prince George's County, Maryland.

Analyte	Qualifier	Concentration (mg/kg)	TEC[1] (mg/kg)	Exceed (Yes/No)
Aroclor 1016	U	0.0332	0.0598	No
Aroclor 1221	U	0.0332	0.0598	No
Aroclor 1232	U	0.0332	0.0598	No
Aroclor 1242	U	0.0332	0.0598	No
Aroclor 1248	U	0.0332	0.0598	No
Aroclor 1254	U	0.0332	0.0598	No
Aroclor 1260		0.0944	0.0598	Yes

< or U = compound was not detected, reported concentration represents one half the detection level.
Contaminant concentrations and ERM values are reported in units of mg/kg.

[1]TEC = Threshold Effect Concentration (mg/kg).

ATTACHMENTS

ATTACHMENT A

Attachment A. Identification of Chemicals of Concern: United Rigging and Hauling, Beltsville, Prince George's County, Maryland; PCA Code: 69048

Sample ID	Analyte	CAS	Matrix	Concentration	Qual.	Units	Adjusted Tap Water RBC	Pass Tier 1 Screen ?	Adjusted Soil RBC (Residential)		Pass Tier 1 Screen ?
Sediment											
Surface:											
No RBCs Available											
URH SED-11	Aroclor 1262		Sediment	0.0332	U	mg/kg	--	--			?
URH SED-11	Aroclor 1268		Sediment	0.0332	U	mg/kg	--	--			?
Organics:											
URH SED-11	Aroclor 1016	12674112	Sediment	0.0332	U	mg/kg	--	--	3.90E-01	N	Pass
URH SED-11	Aroclor 1221	11104282	Sediment	0.0332	U	mg/kg	--	--	1.40E-01	C	Pass
URH SED-11	Aroclor 1232	11141165	Sediment	0.0332	U	mg/kg	--	--	1.40E-01	C	Pass
URH SED-11	Aroclor 1242	53469219	Sediment	0.0332	U	mg/kg	--	--	2.20E-01	C	Pass
URH SED-11	Aroclor 1248	12672296	Sediment	0.0332	U	mg/kg	--	--	2.20E-01	C	Pass
URH SED-11	Aroclor 1254	11097691	Sediment	0.0332	U	mg/kg	--	--	2.20E-01	C	Pass
URH SED-5	Aroclor 1260	11096825	Sediment	0.0944		mg/kg	--	--	2.20E-01	C	Pass

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Attachment A. Identification of Chemicals of Concern (Residential): United Rigging and Hauling, Beltsville, Prince George's County, Maryland; PCA Code: 69048

Sample ID	Analyte	CAS	Matrix	Concentration	Qual.	Units	MDE Groundwater Standard	Pass Tier 1 Screen ?	MDE Soil Standard (Residential)	Pass Tier 1 Screen ?
Sediment										
Surface:										
No Standards Available										
URH SED-11	Aroclor 1262		Sediment	0.0332	U	mg/kg	--	--		?
URH SED-11	Aroclor 1268		Sediment	0.0332	U	mg/kg	--	--		?
Organics:										
URH SED-11	Aroclor 1016	12674112	Sediment	0.0332	U	mg/kg	--	--	5.48E-01	Pass
URH SED-11	Aroclor 1221	11104282	Sediment	0.0332	U	mg/kg	--	--	3.19E-01	Pass
URH SED-11	Aroclor 1232	11141165	Sediment	0.0332	U	mg/kg	--	--	3.19E-01	Pass
URH SED-11	Aroclor 1242	53469219	Sediment	0.0332	U	mg/kg	--	--	3.19E-01	Pass
URH SED-11	Aroclor 1248	12672296	Sediment	0.0332	U	mg/kg	--	--	3.19E-01	Pass
URH SED-11	Aroclor 1254	11097691	Sediment	0.0332	U	mg/kg	--	--	3.20E-01	Pass
URH SED-5	Aroclor 1260	11096825	Sediment	0.0944		mg/kg	--	--	3.19E-01	Pass

* RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Wednesday, March 19, 2014

Screening Quick Reference Tables for Organics – Sediment

These tables were developed for screening purposes only: they do not represent official NOAA policy and do not constitute criteria or clean-up levels. All attempts have been made to ensure accuracy; however, NOAA is not liable for errors. Values are subject to changes as new data become available.

ANALYTE All concentrations in parts per billion dry weight unless specified otherwise	CAS Number	FRESHWATER SEDIMENT								DUTCH Sediment[5]		MARINE SEDIMENT							Eco Tox EqP[9] @1%TOC
		ARCS *Hyalella* TEL[1]	TEL[2]	TEC[2]	LEL[3]	PEL[2]	PEC[2]	SEL[3]	UET[4] @1%TOC	Target	Intervention	T$_{20}$[6]	TEL[7]	ERL[7]	T$_{50}$[6]	PEL[7]	ERM[7]	AET[8]	
Monochloroaniline (3 isomers)	na									5	50,000								
Monochlorobenzenes	108907									< 30	15,000 LB								820
Monochloronaphthalenes	na									120 LB	10,000								
Monochlorophenols (sum)	na									< 10	5,400 L								
Naphthalene	91203	14.65	34.6 c	176		391 c	561		600 I	120 LB	17,000 LB	30	34.6	160	217	391	2,100	230 E	480
Nitrobenzene	98953																	21 N	
Nitrosodiphenylamine, N-	86306																	28 I	
Nonylphenol	25154523		1,400 c										1,000 c						
PAHs, Low MW	na	76.42							5,300 M	< 1,000	< 40,000		312	552		1,442	3,160	1,200 E	
PAHs, High MW	na	193							6,500 M	< 1,000	< 40,000		655	1,700		6,676	9,600	7,900 E	
PAHs, Total	na	264.1		1,610	4,000		22,800*	100,000*	12,000 M	1,000	40,000		1,684	4,022		16,770	44,792		
PCB 105	32598144									1.5 LB	< 1,000								
PCB 126	57465288									0.0025 LB	920 LB								
PCB 77	32598131									0.42 LB	< 1,00								
PCB-Aroclor 1254	na		60 c		60	340 c		340					63.3 c			709 c			
PCBs (sum)	1336363	31.62	34.1	59.8	70	277	676	5,300	26 M	0.3 LB	1,000	35	21.6	22.7	368	189	180	130 M	
Pentachloroaniline	527208										10,000 S								690
Pentachlorobenzene	608935									15 LB	16,000 LB							17 B	
Pentachlorophenol [PCP: at ph 7.8‡]	87865									< 10	8,000 LB								
Perylene	198550											74			453				
Phenanthrene	85018	18.73	41.9	204	560	515	1,170	9,500	800 I	3,300 LB	31,00 LB	68	86.7	240	455	544	1500	660 E	
Phenol	108952								48 † H	50	14,000 LB							130 E	
Phthalates (sum)	na									100	60,000								
Propanol, 2- (Isopropanol)	67630										220,000 S								
Pyrene	129000	44.27	53	195	490	875	1,520	8,500	1,000 i			125	153	665	932	1,398	2,600	2,400 E	
Pyridine	110861									100	500								
Resorcinol (m-dihydroxybenzene)	108463									34 LB	4,600 LB								
Styrene (Vinyl benzene)	100425									200 LB	86,000 LB								
Tetrachloroaniline, 2,3,5,6-	3481207										< 30,000 S								
Tetrachlorobenzene, 1,2,3,4-	634662									160 L	16,000 L								
Tetrachlorobenzene, 1,2,3,5-	634902									6.5 L	650 L								

4: Entry is lowest, reliable value among AET tests, on 1% TOC basis: I - Infaunal community impact ; M - Microtox bioassay ; H - *Hyalella azteca* bioassay ; † - value on dry weight basis.

5: S – Serious Contamination; L – Environmental Risk Limit for soil; LB – Environmental Risk Limit for soil or bedded sediment

8: Entry is lowest value among AET tests: I - Infaunal community impact ; A - Amphipod ; B - Bivalve ; M- Microtox bioassay ; O - Oyster larvae ; E - Echinoderm larvae ; L - Larval$_{max}$; or , N - *Neanthes* bioassay.

ORIGINAL

EPA Region III BTAG
Freshwater Sediment Screening Benchmarks
8/2006

CAS#	Analyte	FW Sed (mg/kg)	Ref	End Note	Bioaccumulative[o] Class of Compound	
959-98-8	Endosulfan I (a-endosulfan)	0.0029	l		Organochlorine Pesticide	B
33213-65-9	Endosulfan II (b-endosulfan)	0.014	l		Organochlorine Pesticide	B
1031-07-8	Endosulfan sulfate	0.0054	l	7	Organochlorine Pesticide	
72-20-8	Endrin	0.00222	h		Organochlorine Pesticide	B
100-41-4	Ethylbenzene	1.1	a,b	1	Volatile	
206-44-0	Fluoranthene	0.423	h		PAH	B
86-73-7	Fluorene	0.0774	h		PAH	B
86-50-0	Guthion	0.0000505	a,b	1	Other Pesticide/PCB	
319-84-6	HCH, a- (BHC, alpha)	0.006	g		Organochlorine Pesticide	
319-85-7	HCH, b- (BHC, beta)	0.005	g		Organochlorine Pesticide	
319-86-8	HCH, d- (BHC, delta)	6.4	a,b	1	Organochlorine Pesticide	
58-89-9	HCH, gamma (Lindane) (BHC, gamma)	0.00237	h		Organochlorine Pesticide	
76-44-8	Heptachlor	0.068	f	8	Organochlorine Pesticide	B
1024-57-3	Heptachlor epoxide	0.00247	h		Organochlorine Pesticide	B
118-74-1	Hexachlorobenzene	0.02	g	4	Other Semi-Volatile	B
87-68-3	Hexachlorobutadiene				Volatile	B
608-73-1	Hexachlorocyclohexanes (HCH, BHC)	0.003	g	4	Organochlorine Pesticide	B
77-47-4	Hexachlorocyclopentadiene				Organochlorine Pesticide	B
67-72-1	Hexachloroethane	1.027	a,b	1	Volatile	B
110-54-3	Hexane	0.0396	a,b	1	Volatile	
193-39-5	Indeno(1,2,3-c,d)pyrene	0.017	j	9	PAH	B
7439-89-6	Iron	20000	g		Inorganic/Metal	
98-82-8	Isopropylbenzene (Cumene)	0.086	a,b	1		
7439-92-1	Lead	35.8	h	6	Inorganic/Metal	B
58-89-9	Lindane (BHC,gamma)	0.00237	h		Organochlorine Pesticide	
121-75-5	Malathion	0.000203	a,b	1	Other Pesticide/PCB	
7439-96-5	Manganese	460	g	4	Inorganic/Metal	
7439-97-6	Mercury	0.18	h		Inorganic/Metal	
72-43-5	Methoxychlor	0.0187	a,b	1	Organochlorine Pesticide	B
22967-92-6	Methylmercury				Volatile	B
2385-85-5	Mirex	0.007	g	4	Chlorinated Pesticides	B
108-90-7	Monochlorobenzene (Chlorobenzene)	0.00842	a,b	1		
91-20-3	Naphthalene	0.176	h		PAH	
84-74-2	n-Butylphthalate (Di-n-butyl phthalate)	6.47	a,b	1	Other Semi-Volatile	
7440-02-0	Nickel	22.7	h	6	Inorganic/Metal	B
86-30-6	N-Nitrosodiphenylamine	2.68	a,b	1	Other Semi-Volatile	
	PAHs, High Molecular Weight	0.19	j	9	PAH	
	PAHs, Low Molecular Weight	0.076	j		PAH	
SEQ NO-27-3	PAHs, total	1.61	h	10	PAH	
56-38-2	Parathion	0.000757	a,b	1	PAH	
1336-36-3	PCBs, total	0.0598	h	2	Other Pesticide/PCB	B
106-44-5	p-Cresol (4-Methylphenol)	0.67	f	3	Other Semi-Volatile	
608-93-5	Pentachlorobenzene	8.89	a,b	1	Other Semi-Volatile	B
76-01-7	Pentachloroethane	0.826	a,b	1	Other Semi-Volatile	
82-68-8	Pentachloronitrobenzene				Pesticide	B
87-86-5	Pentachlorophenol	0.504	a,b	1	Other Semi-Volatile	B
85-01-8	Phenanthrene	0.204	h		PAH	B
108-95-2	Phenol	0.42	f	3	Other Semi-Volatile	B
100-42-5	Phenylethylene	0.559	a,b	1	Other Semi-Volatile	